

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Margaret Kinoman Examiner #: 69738 Date: 3-15-06
 Art Unit: 1751 Phone Number ~~301~~ 2-1314 Serial Number: 10/749166
 Mail Box and Bldg/Room Location: Room 9A49 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: See BIB ATTACHED
 Inventors (please provide full names): _____

Earliest Priority Filing Date: _____

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Please search dye of
 formula 1 of cl 2,
 (page 4 of spec attached
 R_1 , R_2 & R_3 seem clearer there)

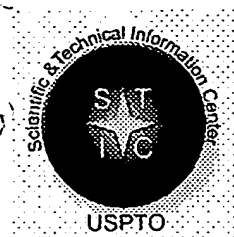
SCIENTIFIC REFERENCE BR
 Sci. & Tech. Info. Cntr

MAR 16

Pat. & T.M. Office

STAFF USE ONLY

	Type of Search	Vendors and cost where applicable
Searcher: <u>M&H</u>	NA Sequence (#) _____	STN <input checked="" type="checkbox"/> \$715.76
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structure (#) <u>4³ sheets</u>	Questel/Orbit _____
Date Searcher Picked Up: _____	Bibliographic _____	Dr.Link _____
Date Completed: <u>3/16/06</u>	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: <u>20</u>	Fulltext _____	Sequence Systems _____
Clerical Prep Time: _____	Patent Family _____	WWW/Internet _____
Online Time: <u>90</u>	Other _____	Other (specify) _____



STIC Search Report

EIC 1700

STIC Database Tracking Number: 182316

TO: Margaret Einsmann

Location:

Art Unit : 1751

March 16, 2006

Case Serial Number: 10/749166

From: Mei Huang

Location: EIC 1700

REMSEN 4B28

Phone: 571/272-3952

Mei.huang@uspto.gov

Search Notes

Examiner Einsmann,

If you have any questions or if you would like to refine the search query, please feel free to contact me.

Thank you for using STIC services!

Mei Huang





STIC Search Results Feedback Form

EIC17000

Questions about the scope or the results of the search? Contact *the EIC searcher* or contact:

Kathleen Fuller, EIC 1700 Team Leader
571/272-2505 REMSEN 4B28

Voluntary Results Feedback Form

- I am an examiner in Workgroup: Example: 1713
➤ Relevant prior art **found**, search results used as follows:

- ☐ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
(journal articles, conference proceedings, new product announcements etc.)

➤ Relevant prior art **not found**:

- ☐ Results verified the lack of relevant prior art (helped determine patentability).
- ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

Drop off or send completed forms to EIC1700 REMSEN 4B28



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Bib Data Sheet

CONFIRMATION NO. 7821

SERIAL NUMBER 10/749,166	FILING DATE 12/30/2003 RULE	CLASS 008	GROUP ART UNIT 1751	ATTORNEY DOCKET NO. 381.047
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APPLICANTS

Matthew A. Szymanski, Pulaski, WI;

** CONTINUING DATA *****
 This appln claims benefit of 60/437,978 01/03/2003 *me*

** FOREIGN APPLICATIONS *****

IF REQUIRED, FOREIGN FILING LICENSE GRANTED
 ** 03/30/2004

Foreign Priority claimed <input type="checkbox"/> yes <input checked="" type="checkbox"/> no	STATE OR COUNTRY WI	SHEETS DRAWING 0	TOTAL CLAIMS 19	INDEPENDENT CLAIMS 3
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35 USC 119 (a-d) conditions met
☐ yes ☒ no ☐ Met after Allowance

Verified and Acknowledged
 Examiner's Signature: *Margaret E. Korman* Initials: *ME*

ADDRESS
 Mathew E Corr
 BOYLE FREDRICKSON NEWHOLM STEIN & GRATZ S C
 250 Plaze Suite 1030
 250 East Wisconsin Avenue
 Milwaukee , WI
 53202

TITLE
 Method for forming colored cellulosic materials

FILING FEE RECEIVED 770	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:	<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees (Filing) <input type="checkbox"/> 1.17 Fees (Processing Ext. of time) <input type="checkbox"/> 1.18 Fees (Issue)
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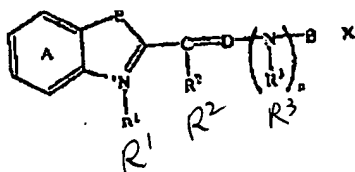
U.S. Serial No. 10/749,166

Page 5 of 11

Attorney Docket 381.047

- b) applying a colorant to the substrate, the colorant comprising a non-white pigment, a thickener and a solvent; and
- c) applying an overcoat to the substrate over the colorant.

21. (New) The method of claim 20 wherein the pigment is a dye represented by the following formula:



wherein, ring A represents a benzene ring which may have a substituent or may further be cyclocondensed with another aromatic ring;

B represents an aryl group which may have a substituent or may be coupled with R² to form a heterocyclic structure which will be described later, or a heterocyclic group which may have a substituent or may be coupled with R² to form a heterocyclic structure which will be described later,

D represents a nitrogen atom or a group CR⁴ (in which R⁴ represents a hydrogen atom or a C₁₋₆ alkyl group);

E represents a group NR⁵, CR⁶R⁷ or CR⁶=CR⁷ (in which R⁵ represents a C₁₋₆ alkyl group which may have a substituent, a C₂₋₆ alkenyl group which may have a substituent or an aryl group which may have a substituent, or forms, when taken together with R², a ring which will be described later, and R⁶ and R⁷ each independently represents a hydrogen atom or a C₁₋₆ alkyl group), an oxygen atom or a sulfur atom;

R¹ represents a C₁₋₆ alkyl group which may have a substituent, a C₂₋₆ alkenyl group which may have a substituent or an aryl group which may have a substituent;

(00092036.DOC /)

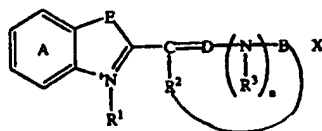
U.S. Serial No. 10/749,166
Page 6 of 11
Attorney Docket 381.047

R^2 represents a divalent group bonded to B or forms, when taken together with R^3 or R^5 , a ring which will be described later,
 R^3 forms, when taken together with R^2 , a ring which will be described later,
n stands for 0 or 1, with the proviso that when $n=0$, R^2 and R^5 , when taken together with $\text{N}-\text{C}-\text{C}$, form a 5- to 7-membered nitrogen-containing heterocyclic structure which may have a substituent, or R^2 is bonded to B, thereby forming a 6- or 7-membered heterocyclic structure which may have a substituent and may contain a hetero atom other than D and when $n=1$, R^2 and R^3 , when taken together with $\text{C}=\text{D}-\text{N}$, form a 5- to 7-membered nitrogen-containing heterocyclic structure which may have a substituent, and
 X^- represents an anion.

{00092036.DOC /}

1-5% of an optional second thickener (in lieu of or in addition to the first thickener) for rheology modification; and
the balance, water.

With particular regard to the dye stuff or pigment, the dye stuff for the purposes of this disclosure is defined as any compound within the class of either basic dyes or anionic direct or fiber reactive dyes, or a pigment that can impart a color to a cellulosic material such as a dry coloring matter, usually an insoluble powder to be mixed with water, oil or another base to produce paint in similar products. More particularly, in one aspect of the present invention, there is thus provided a colorant comprising, as a direct dye, a compound represented by the following formula (1):



wherein, ring A represents a benzene ring which may have a substituent or may further be cyclocondensed with another aromatic ring;

B represents an aryl group which may have a substituent or may be coupled with R² to form a heterocyclic structure which will be described later, or a heterocyclic group which may have a substituent or may be coupled with R² to form a heterocyclic structure which will be described later,

D represents a nitrogen atom or a group CR⁴ (in which R⁴ represents a hydrogen atom or a C₁₋₆ alkyl group);

E represents a group NR⁵, CR⁶R⁷ or CR⁶=CR⁷ (in which R⁵ represents a C₁₋₆ alkyl group which may have a substituent, a C₂₋₆ alkenyl group which may have a substituent or an aryl group which may have a substituent, or forms, when taken together with R², a ring which will be described later, and R⁶ and R⁷ each independently represents a hydrogen atom or a C₁₋₆ alkyl group), an oxygen atom or a sulfur atom;

R¹ represents a C₁₋₆ alkyl group which may have a substituent, a C₂₋₆ alkenyl group which may have a substituent or an aryl group which may have a substituent;

=> fil reg

FILE 'REGISTRY' ENTERED AT 14:42:57 ON 16 MAR 2006

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=> d his ful

(FILE 'HOME' ENTERED AT 09:53:26 ON 16 MAR 2006)

FILE 'HCAPLUS' ENTERED AT 09:54:02 ON 16 MAR 2006

E US20040139566/PN

L1 1 SEA US2004139566/PN
D IALL
SEL RN

FILE 'REGISTRY' ENTERED AT 09:55:14 ON 16 MAR 2006

L2 5 SEA (9003-17-2/BI OR 9003-27-4/BI OR 9003-53-6/BI OR
9004-32-4/BI OR 9005-25-8/BI)
D SCA

L3 STR

L4 STR L3

L5 STR L4

L6 50 SEA SSS SAM L5

FILE 'HCAPLUS' ENTERED AT 12:12:15 ON 16 MAR 2006

L7 2274 SEA SZYMANSKI ?/AU

L8 10 SEA L7 AND PIGMENT#
D SCA TI
SEL RN

FILE 'REGISTRY' ENTERED AT 12:22:29 ON 16 MAR 2006

L9 55 SEA (13463-67-7/BI OR 1313-27-5/BI OR 1314-13-2/BI OR

L10 STR L5

L11 33 SEA SSS SAM L10

L12 SCR 1607

L13 SCR 2040

L14 50 SEA SSS SAM L10 AND (L12 AND L13)

L15 61166 SEA SSS FUL L10 AND (L12 AND L13)

SAV L15 TEMP EIN166/A

L16 STR L10

L17 4 SEA SUB=L15 SSS SAM L16

L18 STR L16

L19 4 SEA SUB=L15 SSS SAM L18

L20 STR L16

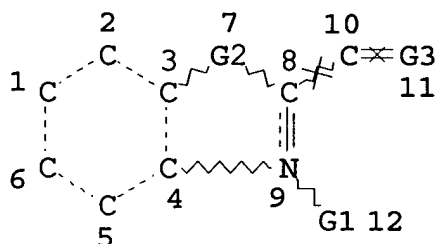
L21 12 SEA SUB=L15 SSS SAM L20
 L22 STR L10
 L23 8 SEA SUB=L15 SSS SAM L22
 L24 STR L16
 L25 4 SEA SUB=L15 SSS SAM L24
 L26 52 SEA SUB=L15 SSS FUL L24
 SAV L26 EIN166S1/A
 L27 254 SEA SUB=L15 SSS FUL L20
 SAV L27 EIN166S2/A
 L28 93 SEA SUB=L15 SSS FUL L22
 SAV L28 EIN166S3/A

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L29 14 SEA L26
 D SCA TI
 L30 96 SEA L27
 L31 11 SEA L28
 L32 1528774 SEA COLOR? OR COLOUR? OR PIGMENT? OR DYE? OR STAIN? OR
 PAINT? OR CHROMA# OR CHROMOGEN? OR CHROMOPHOR? OR TINCT?
 OR TINT?
 L33 13 SEA L29 AND L32
 L34 81 SEA L30 AND L32
 L35 11 SEA L31 AND L32
 L36 472805 SEA (COLOR? OR COLOUR? OR PIGMENT? OR DYE? OR STAIN? OR
 PAINT? OR CHROMA# OR CHROMOGEN? OR CHROMOPHOR? OR TINCT?
 OR TINT?)/TI
 L37 61 SEA L34 AND L36
 L38 59 SEA L37 AND (1840-2003/PY OR 1840-2003/PRY)
 L39 24 SEA L29 OR L31
 L40 56 SEA L38 NOT L39
 SAV L40 EIN166F/A

=> d l26 que stat

L10 STR



Ak @13 Cb @14

C=C
@16 @17

VAR G1=13/14

VAR G2=N/C/16-3 17-8/O/S

VAR G3=N/C

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

GGCAT IS UNS AT 14

DEFAULT ECLEVEL IS LIMITED

ECOUNT IS M1-X6 C AT 13

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 16

STEREO ATTRIBUTES: NONE

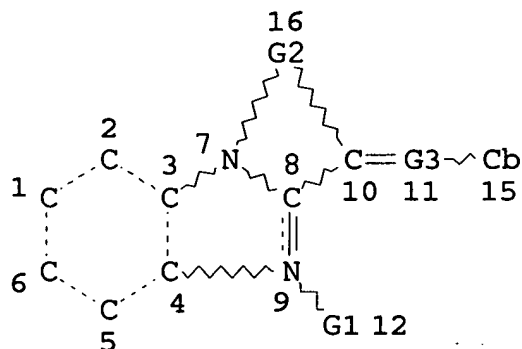
L12 SCR 1607

L13 SCR 2040

L15 61166 SEA FILE=REGISTRY SSS FUL L10 AND (L12 AND L13)

L24 STR

Ak @13 Cb @14



$n=0$,
 $R^2 \& R^5$ form
 a 5-7 member ring

VAR G1=13/14

REP G2=(2-4) A

VAR G3=N/C

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

GGCAT IS UNS AT 14

GGCAT IS UNS AT 15

DEFAULT ECLEVEL IS LIMITED

ECOUNT IS M1-X6 C AT 13

GRAPH ATTRIBUTES:

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NUMBER OF NODES IS 16

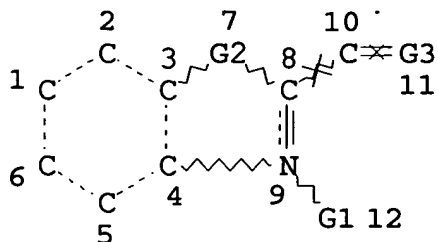
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SEARCH TIME: 00.00.01

52 ANSWERS

=> d 127 que stat
L10 STR



Ak @13

Cb @14

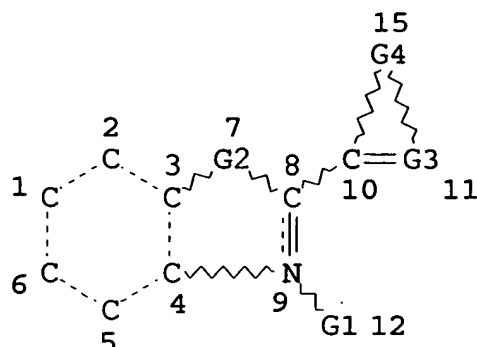
C=C
@16 @17

VAR G1=13/14
VAR G2=N/C/16-3 17-8/O/S
VAR G3=N/C
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
GGCAT IS UNS AT 14
DEFAULT ECLEVEL IS LIMITED
ECOUNT IS M1-X6 C AT 13

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 16

STEREO ATTRIBUTES: NONE
L12 SCR 1607
L13 SCR 2040
L15 61166 SEA FILE=REGISTRY SSS FUL L10 AND (L12 AND L13)
L20 STR

Ak @13 Cb @14

C=C
@16 @17

$n=0$, R^2 and β
form a 6-7
member ring

VAR G1=13/14
VAR G2=N/C/16-3 17-8/O/S
VAR G3=N/C
REP G4=(4-5) A
NODE ATTRIBUTES:
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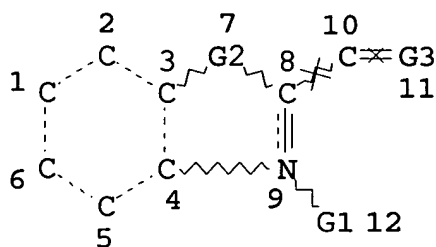
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NUMBER OF NODES IS 17

STEREO ATTRIBUTES: NONE
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SEARCH TIME: 00.00.01

254 ANSWERS

=> d 128 que stat
L10 STR



Ak @13 Cb @14

C=C
@16 @17

STEREO ATTRIBUTES: NONE

L28 93 SEA FILE=REGISTRY SUB=L15 SSS FUL L22

100.0% PROCESSED 1114 ITERATIONS

93 ANSWERS

SEARCH TIME: 00.00.02

=> fil hcap

FILE 'HCAPLUS' ENTERED AT 14:43:27 ON 16 MAR 2006

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=> d l39 ibib abs hitstr hitind 1-24

L39 ANSWER 1 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:9839 HCAPLUS

DOCUMENT NUMBER: 136:74284

TITLE: Hair dye composition

INVENTOR(S): Ohashi, Yukihiro; Miyabe, Hajime; Matsunaga, Kenichi; Totoki, Shintaro; Saito, Yoshinori

PATENT ASSIGNEE(S): Kao Corporation, Japan

SOURCE: Eur. Pat. Appl., 11 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	
EP 1166757	A2	20020102	EP 2001-114804	20010627
EP 1166757	A3	20030521		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2002012530	A2	20020115	JP 2000-193175	20000627
US 2002088063	A1	20020711	US 2001-887473	

200106
25US 6616709
PRIORITY APPLN. INFO.:

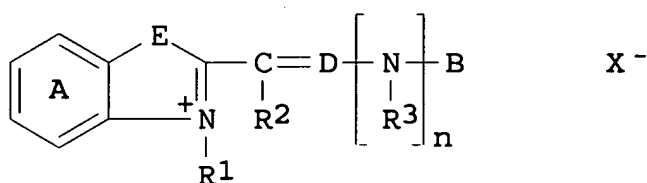
B2 20030909

JP 2000-193175

A

200006
27OTHER SOURCE(S):
GI

MARPAT 136:74284



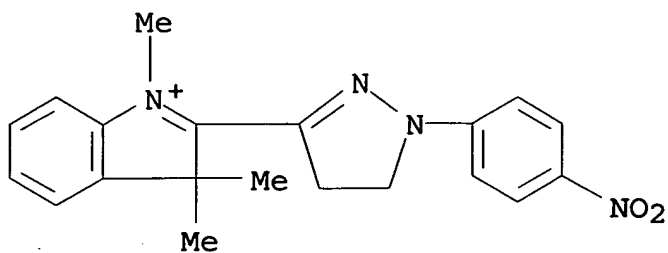
AB The present invention relates to a hair dye compn. having high dyeing power, can strongly impart the hair with an extremely vivid color ranging from green-yellow, yellow, red to blue, has less color fade over time and undergoes a small change in the color tone of the dye after storage. A hair dye compn. comprises, as a direct dye, a compd. I (R1 = C1-6 alkyl; R2 = divalent group bonded to B; R3 = forms a ring together with R2; n = 0, 1; A = benzene ring which may have a substituent or may further be cyclocondensed with another arom. ring; B = aryl group which may have a substituent or may be coupled with R2 to form a heterocyclic structure; D = N, CR4; R4 = H, C1-6 alkyl; E = NR5, CR6R7, CR6:CR7, O, S; R5 = C1-6 alkyl; R6, R7 = H, C1-6 alkyl; X = anion). A hair dye compn. further comprises an oxidizing agent, e.g., hydrogen peroxide, and an oxidative dye.

IT 61519-44-6 61519-46-8 61537-97-1
61537-98-2 75447-05-1 383890-86-6
383890-88-8 383890-89-9 383890-90-2
383890-91-3 383890-92-4 383890-93-5
383890-94-6 383890-95-7

RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)
(hair dye compn. contg. a direct dye, oxidative dye and oxidizing agent)

RN 61519-44-6 HCAPLUS

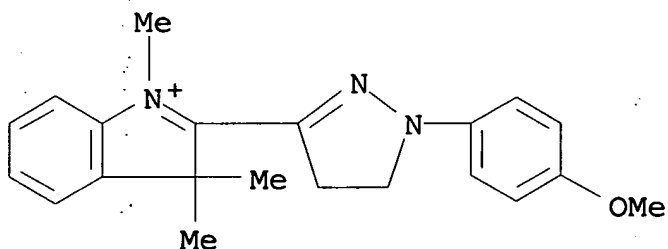
CN 3H-Indolium, 2-[4,5-dihydro-1-(4-nitrophenyl)-1H-pyrazol-3-yl]-1,3,3-trimethyl-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

RN 61519-46-8 HCAPLUS

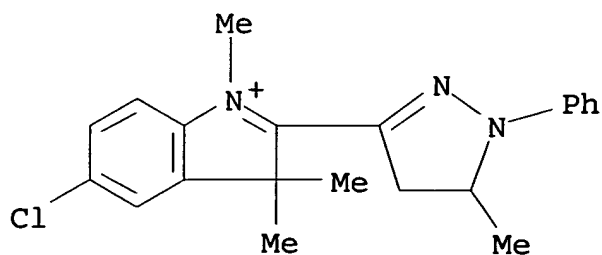
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● Cl⁻

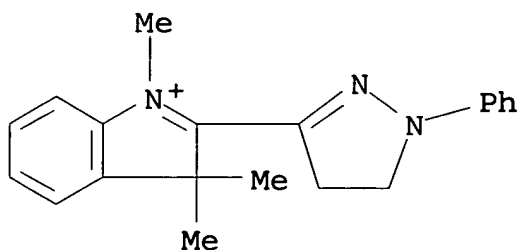
RN 61537-97-1 HCAPLUS

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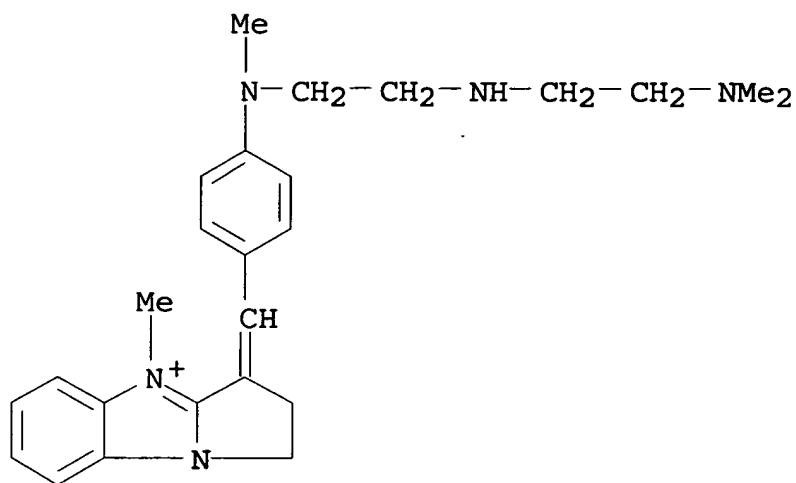
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RN 75447-05-1 HCAPLUS

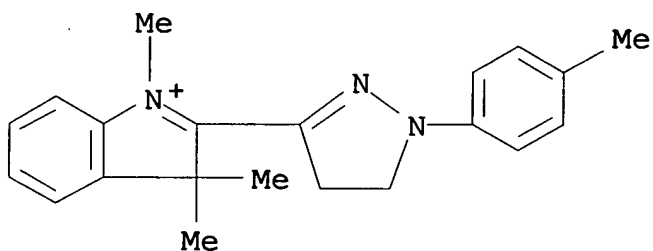
CN 1H-Pyrrolo[1,2-a]benzimidazolium, 3-[[4-[[2-[[2-(dimethylamino)ethyl]amino]ethyl]methylamino]phenyl]methylene]-2,3-dihydro-4-methyl-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

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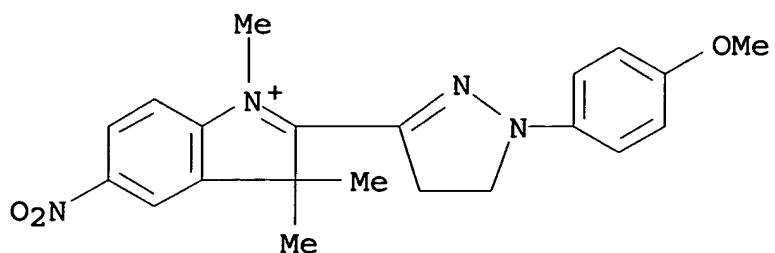
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● Cl⁻

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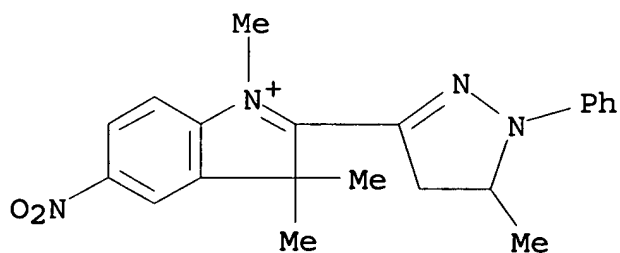
CN 3H-Indolium, 2-[4,5-dihydro-1-(4-methoxyphenyl)-1H-pyrazol-3-yl]-1,3,3-trimethyl-5-nitro-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

RN 383890-89-9 HCAPLUS

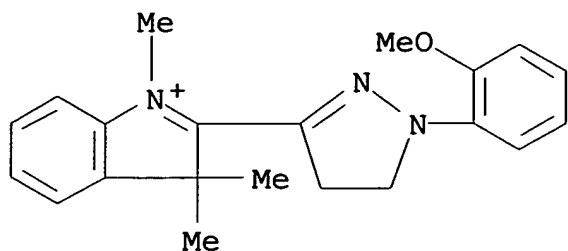
CN 3H-Indolium, 2-(4,5-dihydro-5-methyl-1-phenyl-1H-pyrazol-3-yl)-1,3,3-trimethyl-5-nitro-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

RN 383890-90-2 HCAPLUS

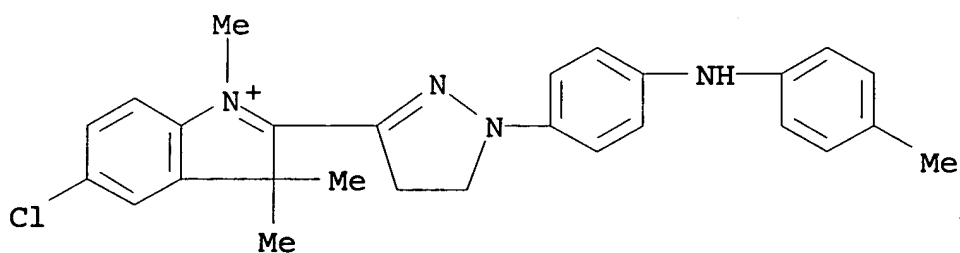
CN 3H-Indolium, 2-[4,5-dihydro-1-(2-methoxyphenyl)-1H-pyrazol-3-yl]-1,3,3-trimethyl-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

RN 383890-91-3 HCAPLUS

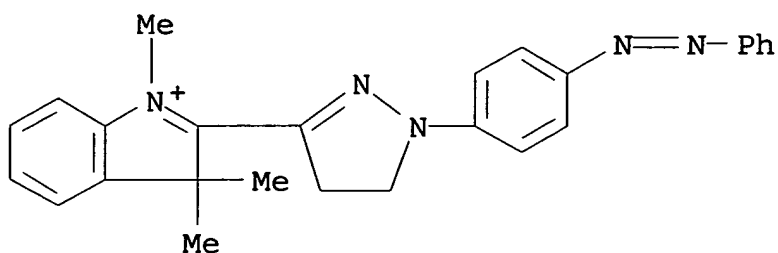
CN 3H-Indolium, 5-chloro-2-[4,5-dihydro-1-[4-[(4-methylphenyl)amino]phenyl]-1H-pyrazol-3-yl]-1,3,3-trimethyl-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

RN 383890-92-4 HCAPLUS

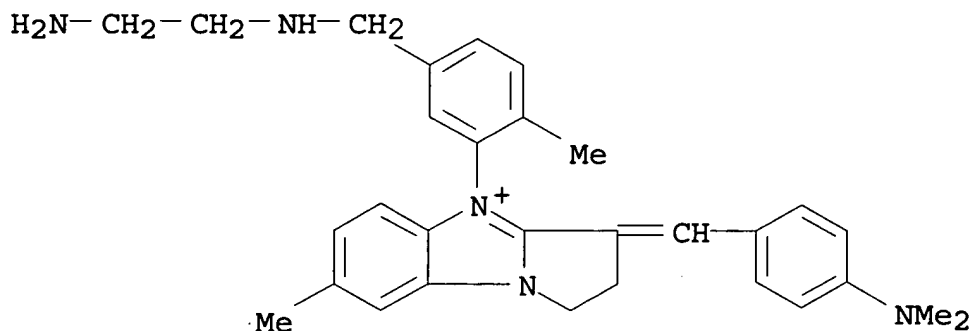
CN 3H-Indolium, 2-[4,5-dihydro-1-[4-(phenylazo)phenyl]-1H-pyrazol-3-yl]-1,3,3-trimethyl-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

RN 383890-93-5 HCAPLUS

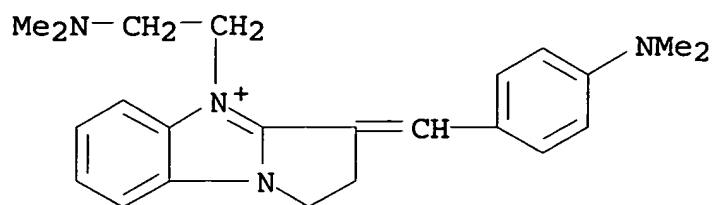
CN 1H-Pyrrolo[1,2-a]benzimidazolium, 4-[5-[[2-(dimethylamino)phenyl]methylene]-2-methylphenyl]-3-[[4-(dimethylamino)phenyl]methylene]-2,3-dihydro-7-methyl-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

RN 383890-94-6 HCAPLUS

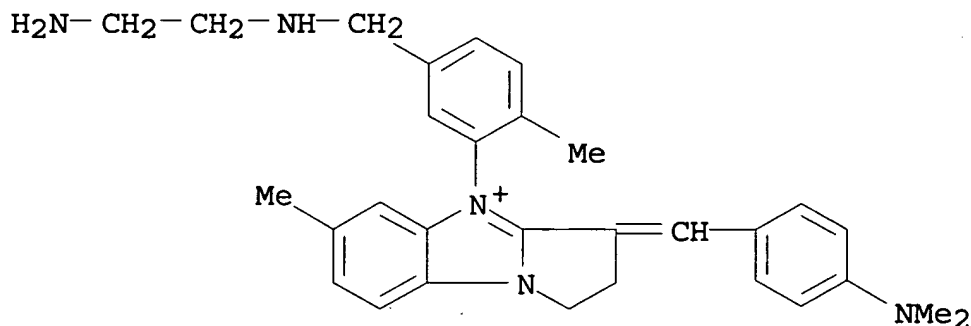
CN 1H-Pyrrolo[1,2-a]benzimidazolium, 4-[2-(dimethylamino)ethyl]-3-[[4-(dimethylamino)phenyl]methylene]-2,3-dihydro-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

RN 383890-95-7 HCAPLUS

CN 1H-Pyrrolo[1,2-a]benzimidazolium, 4-[5-[[2-(aminoethyl)amino]methyl]-2-methylphenyl]-3-[[4-(dimethylamino)phenyl]methylene]-2,3-dihydro-6-methyl-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

IC ICM A61K007-13

CC 62-3 (Essential Oils and Cosmetics)

IT 7722-84-1, Hydrogen peroxide, biological studies 53350-83-7

61519-44-6 61519-46-8 61537-97-1

61537-98-2 68123-13-7, Basic Blue 99 75447-05-1

77061-58-6 93940-65-9 383890-83-3 383890-85-5

383890-86-6 383890-87-7 383890-88-8

383890-89-9 383890-90-2 383890-91-3

383890-92-4 383890-93-5 383890-94-6

383890-95-7

RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)
(hair dye compn. contg. a direct dye, oxidative dye and oxidizing agent)

L39 ANSWER 2 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2000:384718 HCAPLUS

DOCUMENT NUMBER: 133:134979

TITLE: Substituted 1,5-Diphenyl-3-benzothiazol-2-yl-
 Δ^2 -pyrazolines: Synthesis, X-ray
Structure, Photophysics, and Cation Complexation
Properties

AUTHOR(S): Rurack, Knut; Bricks, Julia L.; Schulz,
Burkhard; Maus, Michael; Reck, Guenter;
Resch-Genger, Ute

CORPORATE SOURCE: Institut fuer Physikalische und Theoretische
Chemie, Humboldt Universitaet zu Berlin, Berlin,
D-10117, Germany

SOURCE: Journal of Physical Chemistry A (2000), 104(26),
6171-6188

CODEN: JPCAFH; ISSN: 1089-5639

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The spectroscopic properties of 1-phenyl-3-benzothiazol-2-yl-5-(4-R-phenyl)- Δ^2 -pyrazolines are strongly dependent on both the electronic nature of the substituent R and solvent polarity. As revealed by spectroscopic studies as a function of solvent polarity as well as temp., for electron-rich amino donor substituents in polar solvents, deactivation of the strongly emissive charge transfer (CT) state of the basic 1-phenyl-3-benzothiazol-2-yl- Δ^2 -pyrazoline chromophore has to compete with a fast intramol. electron transfer (ET) quenching reaction. In the case of the dimethylamino deriv. (R = DMA), the rate const. of ET in acetonitrile was detd. to $k_{ET} = 3 \times 10^{10} \text{ s}^{-1}$. This ET process can be utilized for metal ion sensing by introducing nitrogen contg. aza crown ether receptor units to the 4-position of the 5-Ph group. The spectroscopically detd. ET rates of the 5-(N-alkyl)anilino substituents, a DMA, a tetrathia- (AT415C5), and a tetraoxa-monoaza-15-crown-5 (A15C5) group, correlate with electrochem. data and increase in the order $\text{AT415C5} < \text{A15C5} < \text{DMA}$. The metal ion sensing abilities of the two crowned derivs. are presented, and the different signaling mechanisms include binding to the crown ether in the 4-R-position, chelate formation in the 3-benzothiazol-2-yl- Δ^2 -pyrazoline moiety, and

electrophotochem. detection. Furthermore, the rigid "pseudo spiro" geometry of the mols., which holds the three substituents of the central Δ^2 -pyrazoline ring in a fixed prearrangement, was confirmed by X-ray structure anal.

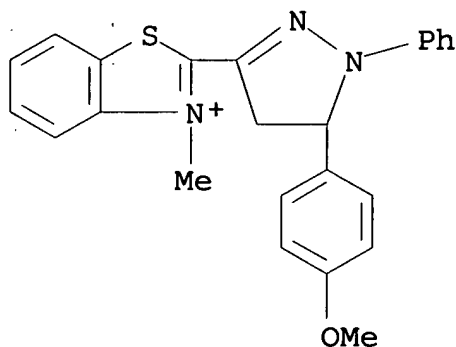
IT 286833-09-8

RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation, nonpreparative)

(spectroscopic properties of 1,5-diphenyl-3-benzothiazol-2-yl- Δ^2 -pyrazolines)

RN 286833-09-8 HCAPLUS

CN Benzothiazolium, 2-[4,5-dihydro-5-(4-methoxyphenyl)-1-phenyl-1H-pyrazol-3-yl]-3-methyl-, iodide (9CI) (CA INDEX NAME)



● I⁻

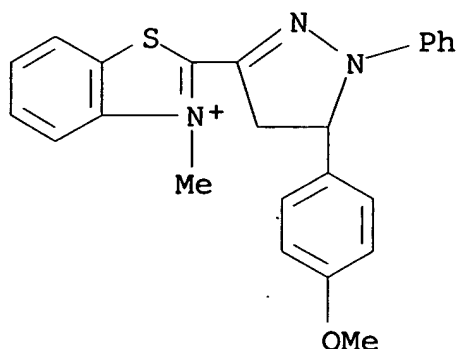
IT 286833-07-6

RL: PRP (Properties)

(spectroscopic properties of 1,5-diphenyl-3-benzothiazol-2-yl- Δ^2 -pyrazolines)

RN 286833-07-6 HCAPLUS

CN Benzothiazolium, 2-[4,5-dihydro-5-(4-methoxyphenyl)-1-phenyl-1H-pyrazol-3-yl]-3-methyl- (9CI) (CA INDEX NAME)



- CC 22-9 (Physical Organic Chemistry)
Section cross-reference(s): 73, 75
- IT 742-01-8D, metal complex with Cu 2574-34-7D, metal complex with Cu
7439-92-1D, Lead, complexes with 1,5-diphenyl-3-benzothiazol-2-yl- Δ^2 -pyrazolines, properties 7439-93-2D, Lithium, complexes with 1,5-diphenyl-3-benzothiazol-2-yl- Δ^2 -pyrazolines, properties 7439-95-4D, Magnesium, complexes with 1,5-diphenyl-3-benzothiazol-2-yl- Δ^2 -pyrazolines, properties 7439-97-6D, Mercury, complexes with 1,5-diphenyl-3-benzothiazol-2-yl- Δ^2 -pyrazolines, properties 7440-09-7D, Potassium, complexes with 1,5-diphenyl-3-benzothiazol-2-yl- Δ^2 -pyrazolines, properties 7440-23-5D, Sodium, complexes with 1,5-diphenyl-3-benzothiazol-2-yl- Δ^2 -pyrazolines, properties 7440-24-6D, Strontium, complexes with 1,5-diphenyl-3-benzothiazol-2-yl- Δ^2 -pyrazolines, properties 7440-39-3D, Barium, complexes with 1,5-diphenyl-3-benzothiazol-2-yl- Δ^2 -pyrazolines, properties 7440-50-8D, Copper, complexes with 1,5-diphenyl-3-benzothiazol-2-yl- Δ^2 -pyrazolines, properties 7440-66-6D, Zinc, complexes with 1,5-diphenyl-3-benzothiazol-2-yl- Δ^2 -pyrazolines, properties 7440-70-2D, Calcium, complexes with 1,5-diphenyl-3-benzothiazol-2-yl- Δ^2 -pyrazolines, properties 83185-89-1D, metal complexes with Hg and Zn 192648-60-5D, metal complexes with Li, Na, Sr, K, Mg, Ca, Sr, Ba, Pb, and Hg 192648-61-6D, metal complexes with Hg, Cu and Zn 286833-06-5D, metal complexes with Hg, Zn, Cu and Ag
286833-09-8 286833-10-1 286833-11-2 286833-12-3
286833-13-4
RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation, nonpreparative)
(spectroscopic properties of 1,5-diphenyl-3-benzothiazol-2-yl- Δ^2 -pyrazolines)
- IT 742-01-8 83185-88-0 192648-60-5 **286833-07-6**
RL: PRP (Properties)

(spectroscopic properties of 1,5-diphenyl-3-benzothiazol-2-yl-
Δ2-pyrazolines)

REFERENCE COUNT: 184 THERE ARE 184 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L39 ANSWER 3 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2000:274548 HCAPLUS

DOCUMENT NUMBER: 132:315766

TITLE: Silver halide emulsion, silver halide
photographic and heat development photosensitive
materials using same, and image formation

INVENTOR(S): Kita, Noriyasu; Tanaka, Tatsuo; Kakawa, Nobuaki

PATENT ASSIGNEE(S): Konica Co., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 41 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

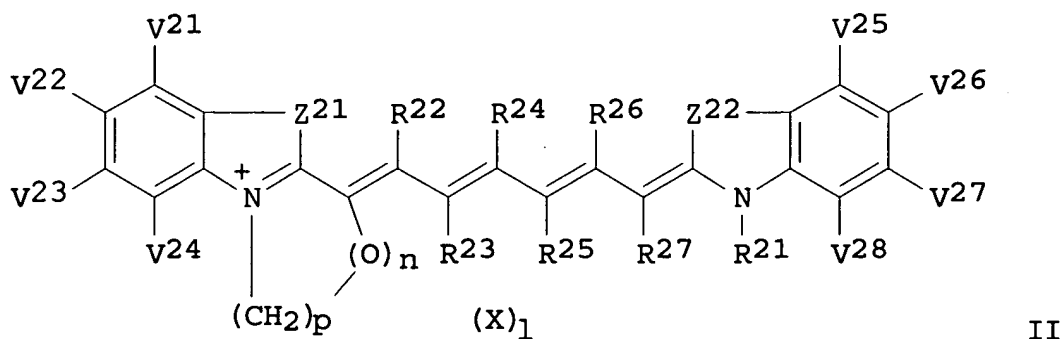
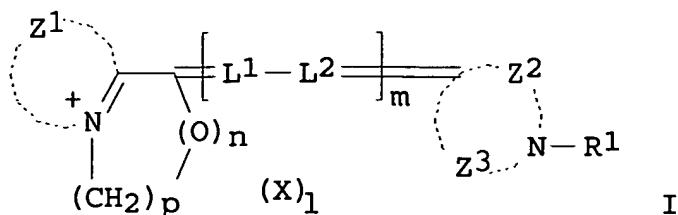
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2000122207	A2	20000428	JP 1998-298390	199810 20
			JP 1998-298390	199810 20

PRIORITY APPLN. INFO.:

OTHER SOURCE(S): MARPAT 132:315766
GI



AB The title Ag halide emulsion contains a compd. I (Z1-3 = nonmetal atoms required to form a 5- or 6-membered N-contg. heterocycle along with the N atom; R1 = aliph. group; L1, L2 = methine; m = 2-4; n = 0 or 1; p = 2 or 3; X = ion required to neutralize the charge in the mol.; l = no. required to neutralize the charge in the mol.). The Ag halide photog. material possesses, on a support, ≥ 1 Ag halide emulsion layers ≥ 1 of which contains a compd. II (Z21, Z22 = O, S, Se, :NR, Z21 \neq Z22 \neq S; R, R21-27 = H, aliph. group, aryl, heterocyclic group, halo, amino, R22 and R24, R23 and R25 or R24 and R26 may link each other to form a 5- or 6-membered ring, dehydrodecalin ring may be formed in combination of R22, R24, and R26; V21-28 = H, substituent; n = 0 or 1; p = 2 or 3; X = ion required to neutralize the charge in the mol.; l = no. required to neutralize the charge in the mol.). The heat development photosensitive material contains an org. Ag salt, a photosensitive Ag halide, a Ag ion-reducing agent, a binder, and II and is heat-developed at a temp. of $\geq 80^\circ$ following exposure to form an image. The Ag halide photog. material possessing IR-sensitive Ag halide emulsion layers shows high sensitivity and low fog. and the heat development photosensitive material also exhibits the same properties even after storage.

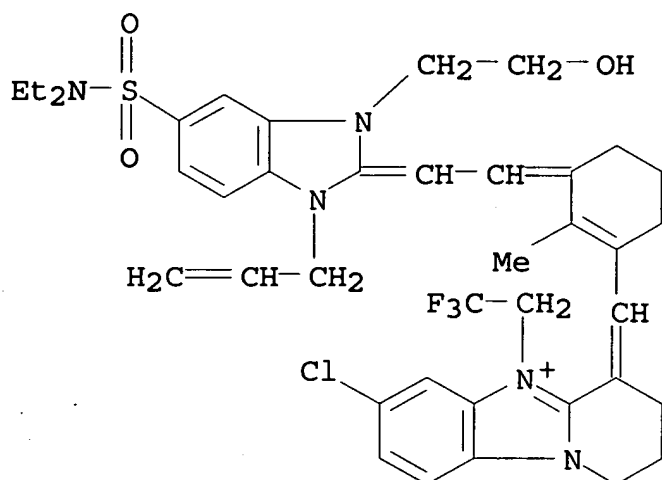
IT 265991-56-8

RL: DEV (Device component use); USES (Uses)

(IR-sensitive photog. emulsion contg. cyanine dye spectral sensitizer)

RN 265991-56-8 HCAPLUS

CN Pyrido[1,2-a]benzimidazolium, 7-chloro-4-[[3-[[5-[(diethylamino)sulfonyl]-1,3-dihydro-3-(2-hydroxyethyl)-1-(2-propenyl)-2H-benzimidazol-2-ylidene]ethylidene]-2-methyl-1-cyclohexen-1-yl]methylene]-1,2,3,4-tetrahydro-5-(2,2,2-trifluoroethyl)-, bromide (9CI) (CA INDEX NAME)



● Br⁻

IC ICM G03C001-22

ICS G03C001-498

CC 74-2 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT 265975-88-0 265975-91-5 265975-92-6 265975-95-9 265975-96-0
 265975-97-1 265975-99-3 265976-00-9 265976-03-2 265976-05-4
 265976-06-5 265976-07-6 265976-13-4 265976-19-0 265976-21-4
 265976-23-6 265987-70-0 265987-71-1 265987-72-2 265987-74-4
 265987-76-6 265987-77-7 **265991-56-8**

RL: DEV (Device component use); USES (Uses)

(IR-sensitive photog. emulsion contg. cyanine dye spectral sensitizer)

L39 ANSWER 4 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN

MEI HUANG EIC1700 REM4B28 571-272-3952

03/16/2006

ACCESSION NUMBER: 1996:428408 HCAPLUS
DOCUMENT NUMBER: 125:93024
TITLE: Electrolytic coloring of anodized aluminum or
aluminum alloys
INVENTOR(S): Chavannes, Jean-Pierre; Schoefberger, Georg;
Tscheulin, Georg
PATENT ASSIGNEE(S): Sandoz-Patent GmbH, Germany
SOURCE: Ger. Offen., 10 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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DE 4439004	A1	19960509	DE 1994-4439004	199411 02
				199411 02

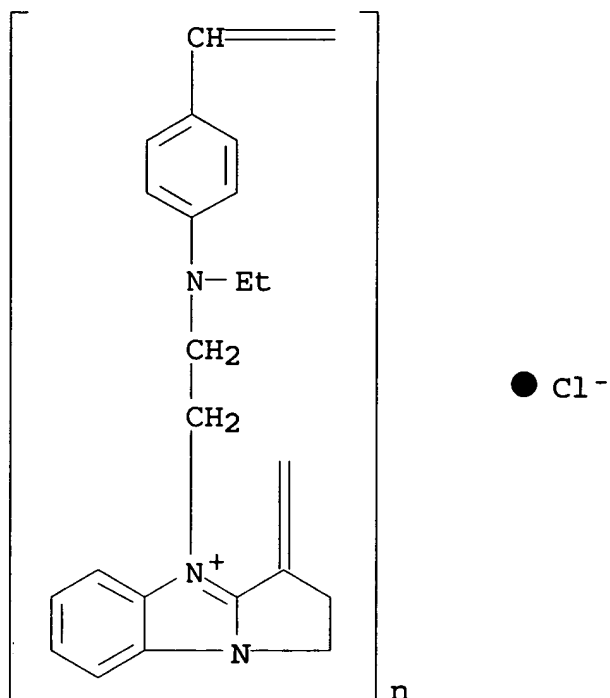
PRIORITY APPLN. INFO.: DE 1994-4439004

AB Anodized Al or Al alloys are treated electrolytically with a 12-20 V a.c. or a 12-20 V a.c.-superimposed d.c. in an aq. electrolyte of ≥ 1 cationic group-contg. dye of azo, anthraquinone, formazan, phthalocyanine, bisoxazine, coumarine, benzoquinoline, benzimidazole, phenoxazine, and phenazine series. The pH of the electrolyte is 3-5 and the dye concn. is 0.01-15 g/L. The obtained colors have a high penetration depth and a high corrosion and abrasion resistant.

IT 96805-67-3
RL: NUU (Other use, unclassified); USES (Uses)
(in electrolytic coloring of anodized aluminum or aluminum alloys)

RN 96805-67-3 HCAPLUS

CN Poly[(1,2-dihydro-3H-pyrrolo[1,2-a]benzimidazolium-4-yl-3-ylidene)-1,2-ethanediyl(ethylimino)-1,4-phenylenemethylidyne chloride] (9CI)
(CA INDEX NAME)



IC ICM C25D009-02

ICA C09B029-09; C09B029-32; C09B031-153; C09B035-025; C09B035-031;
C09B035-28; C09B035-21; C09B047-16; C09B023-04; C09B019-00;
C09B025-00; C09B057-02

CC 56-6 (Nonferrous Metals and Alloys)
Section cross-reference(s): 42

IT 147-14-8D, quaternary ammonium salt derivs. 26850-47-5
33203-82-6 53459-98-6D, trimethylammoniomethyl chloride derivs.
71032-99-0, uses 75199-20-1 75214-63-0, uses 79916-70-4
96805-67-3 159317-35-8 159317-38-1, uses 178609-74-0,
uses 178609-75-1 178699-13-3

RL: NUU (Other use, unclassified); USES (Uses)
(in electrolytic coloring of anodized aluminum or aluminum alloys)

L39 ANSWER 5 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN

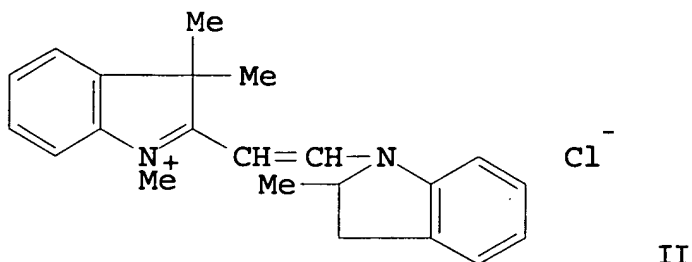
ACCESSION NUMBER: 1989:182905 HCAPLUS

DOCUMENT NUMBER: 110:182905

TITLE: Electrostatographic dry toner containing methine
dye tungstate and/or molybdate salt as
charge-control agent

INVENTOR(S): Raue, Roderich; Psaar, Hubertus; Berneth, Horst
PATENT ASSIGNEE(S): Bayer A.-G., Fed. Rep. Ger.
SOURCE: Ger. Offen., 17 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	
DE 3707262	A1	19880915	DE 1987-3707262	198703 06
US 4849306	A	19890718	US 1988-158520	198802 22
EP 285782	A1	19881012	EP 1988-102604	198802 23
EP 285782	B1	19910925		
R: CH, DE, FR, GB, LI				
JP 63231359	A2	19880927	JP 1988-44656	198802 29
PRIORITY APPLN. INFO.:			DE 1987-3707262	A 198703 06
OTHER SOURCE(S):	MARPAT 110:182905			
GI				



AB A pos. chargeable dry toner for development of latent electrostatic images contains a charge-controlling agent of the formula B+A- (I; B = a cationic residue of a methine dye; A = anion of a heteropolyacid of basic W or Mo with P, Si, V, Co, Al, Mn, Cr, and/or Ni or a cuprous hexacyanoferrate anion). The above material shows improved charge stability and I can be used in color toners. Thus, Na phosphotungstomolybdate was reacted with II to obtain a charge-controlling agent of the above formula. A toner contg. the above compd. had improved triboelec. charging properties.

IT 119446-97-8P

RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and use of, as charge-controlling agent for
electrostatog. toner)

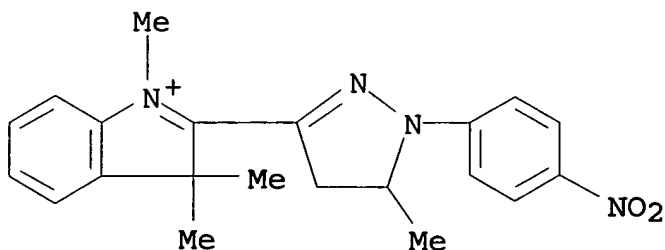
RN 119446-97-8 HCAPLUS

CN 3H-Indolium, 2-[4,5-dihydro-5-methyl-1-(4-nitrophenyl)-1H-pyrazol-3-yl]-1,3,3-trimethyl-, molybdatesilicate (9CI) (CA INDEX NAME)

CM 1

CRN 119446-96-7

CMF C21 H23 N4 O2



CM 2

CRN 11121-25-8

CMF Unspecified

CCI MAN

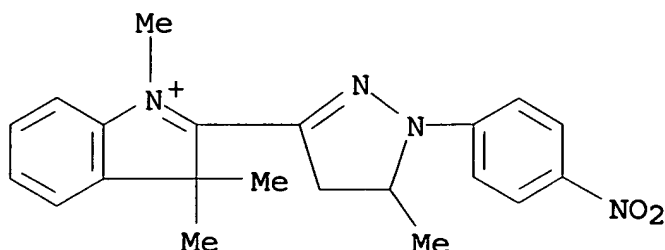
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT 119431-88-8

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, charge-controlling agent from, for electrostatog.
toner)

RN 119431-88-8 HCAPLUS

CN 3H-Indolium, 2-[4,5-dihydro-5-methyl-1-(4-nitrophenyl)-1H-pyrazol-3-yl]-1,3,3-trimethyl-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

IC ICM G03G009-08
ICS C09B067-20; C09B067-32
ICA C09B023-00; C09B029-36; C09B055-00; C09D011-02; G03G009-10;
G03G009-14
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)
Section cross-reference(s): 41
IT 97280-70-1P 103458-26-0P 119431-54-8P 119431-73-1P
119431-75-3P 119431-76-4P 119431-77-5P 119431-79-7P
119432-20-1P **119446-97-8P** 119446-98-9P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and use of, as charge-controlling agent for
electrostatog. toner)
IT 1313-27-5, Molybdenum trioxide, reactions 3056-93-7 3648-36-0
4657-00-5 6320-14-5 6359-50-8 6834-92-0, Sodium metasilicate
7558-79-4, Disodium hydrogen phosphate 11120-01-7, Sodium
tungstate 12680-49-8, Sodium molybdate 25717-55-9 28304-74-7
38926-38-4 119431-86-6 **119431-88-8** 119431-90-2
119432-26-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, charge-controlling agent from, for electrostatog.
toner)

L39 ANSWER 6 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1985:407850 HCAPLUS
DOCUMENT NUMBER: 103:7850
TITLE: Dye compositions containing basic dyes and a

INVENTOR(S): laking agent
 Degen, Hans Juergen
 PATENT ASSIGNEE(S): BASF A.-G., Fed. Rep. Ger.
 SOURCE: Ger. Offen., 13 pp.
 CODEN: GWXXBX
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 3329340	A1	19850307	DE 1983-3329340	19830813
EP 141067	A2	19850515	EP 1984-109174	19840802
R: CH, DE, FR, GB, IT, LI				
JP 60065068	A2	19850413	JP 1984-167959	19840813
PRIORITY APPLN. INFO.:			DE 1983-3329340	A 19830813

AB Basic dye compns. contg. a laking agent, acid, water, and optionally a solvent are prepd. and are used for prepn. of printing inks with good bleedfastness. Suitable laking agents are, e.g., tannin, phenolic resins, and naphthalenesulfonic acids. Bleedfastness is further improved by the presence of an aliph. aldehyde. Thus, addn. with stirring of 10 g tannin to 100 g soln. comprising 20 g basic quinophthalone-type dye in 70 parts H₂O and 10 parts sulfamic acid gave a homogeneous soln. which was mixed (100 parts) with 200 parts H₂O to form a printing ink with bleedfastness (DIN 53 991) on paper 3-4, 3, and 3 in the presence of H₂O HOAc, and 50% alc., resp., compared to 3, 2, and 2 for printing ink contg. no tannin.

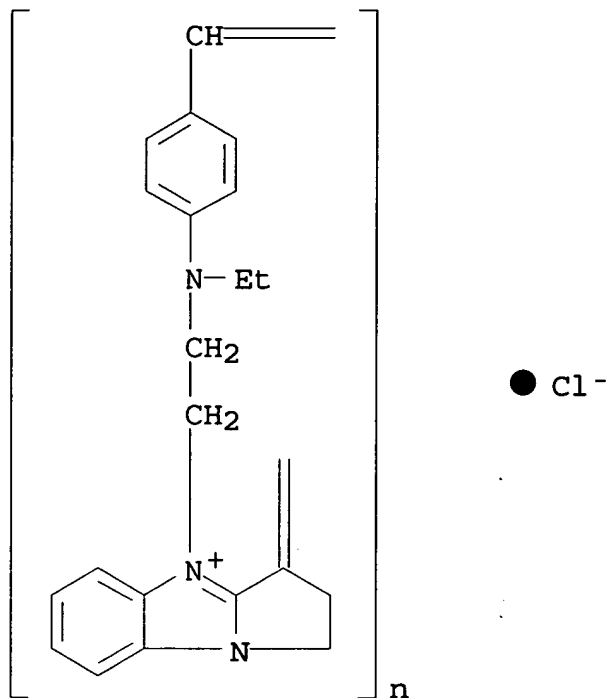
IT 96805-67-3

RL: USES (Uses)

(dyes, aq. compns. contg., for prepn. of bleedfast printing inks)

RN 96805-67-3 HCAPLUS

CN Poly[(1,2-dihydro-3H-pyrrolo[1,2-a]benzimidazolium-4-yl-3-ylidene)-1,2-ethanediyl(ethylimino)-1,4-phenylenemethylidyne chloride] (9CI)
 (CA INDEX NAME)



IC ICM C09B063-00
 ICS C09D011-02
 CC 42-12 (Coatings, Inks, and Related Products)
 IT 84373-10-4D, methylimidazolylmethyl derivs., acetate salts
 96805-39-9 96805-40-2 96805-67-3 96852-03-8
 RL: USES (Uses)
 (dyes, aq. compns. contg., for prepn. of bleedfast printing inks)

L39 ANSWER 7 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1984:200854 HCAPLUS
 DOCUMENT NUMBER: 100:200854
 TITLE: Photographic color images and photographic
 recording materials
 INVENTOR(S): Weyde, Edith; Saleck, Wilhelm; Psaar, Hubertus;
 Von Koenig, Anita; Oehlschlaeger, Hans
 PATENT ASSIGNEE(S): Agfa-Gevaert A.-G. , Fed. Rep. Ger.
 SOURCE: Ger. Offen., 58 pp.
 CODEN: GWXXBX
 DOCUMENT TYPE: Patent
 LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 3201557	A1	19830728	DE 1982-3201557	19820120
DE 3201557	C2	19891012		
US 4458009	A	19840703	US 1983-456971	19830110
JP 58125038	A2	19830725	JP 1983-3606	19830114
JP 03026817	B4	19910412		
PRIORITY APPLN. INFO.:			DE 1982-3201557	A 19820120

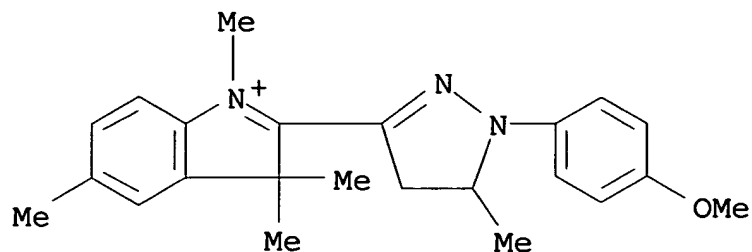
AB The prodn. of a pos. color photog. image by a dry process involves imagewise exposure of a Ag halide photosensitive layer contg. a dye therein or having a dye-contg. layer adjacent thereto to produce development nuclei and subsequent treatment of the development nuclei-contg. material with gaseous H₂O₂. The gaseous H₂O₂ is decompd. by the development nuclei to form bubbles which enhance the Ag image and the undecomposed H₂O₂ bleaches the dye contained in the nonimage areas. Thus, a gelatin-Ag(Br,I) emulsion was coated on a cellulose triacetate support, dried, exposed, and developed to give a Ag image. This material was then overcoated with a 6-8% gelatin soln. contg. malachite green 7 g/L, dried, and treated with gaseous H₂O₂ for 1 s at 100-130°. The H₂O₂ was decompd. in the Ag image areas to form bubbles which enhanced the Ag image and the undecomposed H₂O₂ bleached the dye in the nonimage areas to give a dye image corresponding to the Ag image.

IT 89375-20-2

RL: TEM (Technical or engineered material use); USES (Uses)
 (photog. material contg., for dye-enhanced silver images by
 treatment with gaseous hydrogen peroxide)

RN 89375-20-2 HCAPLUS

CN 3H-Indolium, 2-[4,5-dihydro-1-(4-methoxyphenyl)-5-methyl-1H-pyrazol-3-yl]-1,3,3,5-tetramethyl-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

IC G03C007-00; G03C005-24; G03C007-30
 CC 74-2 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes).
 IT 548-62-9 569-64-2 632-99-5 860-22-0 1694-09-3 3248-91-7
 3521-06-0 4086-05-9 4857-81-2 5141-20-8 12217-48-0
 12221-54-4 25305-97-9 64663-13-4 71550-24-8 **89375-20-2**
 89375-21-3 89375-22-4 89375-23-5 89375-24-6 89375-25-7
 RL: TEM (Technical or engineered material use); USES (Uses)
 (photog. material contg., for dye-enhanced silver images by treatment with gaseous hydrogen peroxide)

L39 ANSWER 8 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1983:217178 HCAPLUS
 DOCUMENT NUMBER: 98:217178
 TITLE: Violet naphthostyryl cationic dyes
 INVENTOR(S): Ayyangar, Nagaraj Ramanuj; Lahoti, Rajgopal Jagannath; Wagle, Dilip Raghunath
 PATENT ASSIGNEE(S): Council of Scientific and Industrial Research, India
 SOURCE: Indian, 8 pp.
 CODEN: INXXAP
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
IN 150165	A	19820807	IN 1978-DE750	197810

PRIORITY APPLN. INFO.:

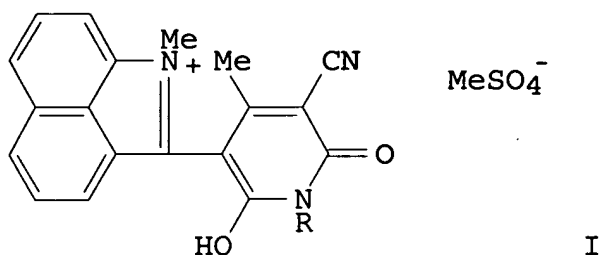
IN 1978-DE750

13

197810

13

GI



AB Violet cationic dyes I (R = Me, Et, o-MeC₆H₄, or o-MeOC₆H₄) are prepd. by methylation of the corresponding base with Me₂SO₄ in PhCl at reflux for ≤ 3 h. I can be applied to acrylic fibers by the exhaustion process to give brilliant dyeings fast to light, washing, steam, and perspiration.

IT 71716-11-5P 71716-13-7P

RL: PREP (Preparation)

(manuf. of, as dye for acrylic fibers)

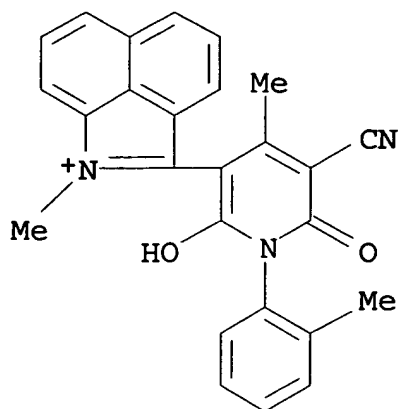
RN 71716-11-5 HCAPLUS

CN Benz[cd]indolium, 2-[5-cyano-1,6-dihydro-2-hydroxy-4-methyl-1-(2-methylphenyl)-6-oxo-3-pyridinyl]-1-methyl-, methyl sulfate (salt) (9CI) (CA INDEX NAME)

CM 1

CRN 71716-10-4

CMF C26 H20 N3 O2



CM 2

CRN 21228-90-0

CMF C H3 O4 S

Me-O-SO₃⁻

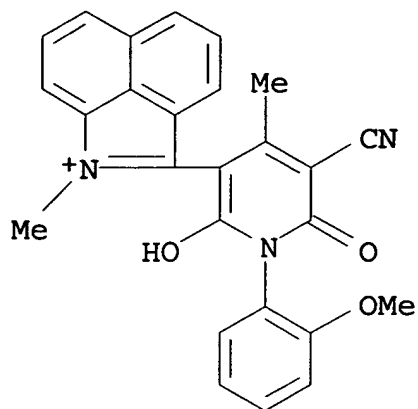
RN 71716-13-7 HCAPLUS

CN Benz[cd]indolium, 2-[5-cyano-1,6-dihydro-2-hydroxy-1-(2-methoxyphenyl)-4-methyl-6-oxo-3-pyridinyl]-1-methyl-, methyl sulfate (salt) (9CI) (CA INDEX NAME)

CM 1

CRN 71716-12-6

CMF C26 H20 N3 O3



CM 2

CRN 21228-90-0

CMF C H3 O4 S

Me-O-SO₃⁻

IC C09B057-00

CC 41-5 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)

IT 71716-07-9P 71716-09-1P 71716-11-5P 71716-13-7P

RL: PREP (Preparation)

(manuf. of, as dye for acrylic fibers)

L39 ANSWER 9 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1981:67282 HCAPLUS

DOCUMENT NUMBER: 94:67282

TITLE: Polymeric dyes

INVENTOR(S): Degen, Hans Juergen; Grychtol, Klaus

PATENT ASSIGNEE(S): BASF A.-G., Fed. Rep. Ger.

SOURCE: Ger. Offen., 62 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO. -----	KIND ----	DATE -----	APPLICATION NO. -----	DATE
DE 2908921	A1	19800918	DE 1979-2908921	197903 07
CA 1123845	A1	19820518	CA 1980-346106	198002 19
EP 15511	A2	19800917	EP 1980-101003	198002 29
EP 15511	A3	19810211		
EP 15511	B1	19880727		
R: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE				
JP 55120661	A2	19800917	JP 1980-27442	198003 06
JP 01038823	B4	19890816		
US 4397651	A	19830809	US 1981-291500	198108 10
PRIORITY APPLN. INFO.:			DE 1979-2908921	A 197903 07
			US 1980-125905	A1 198002 29
			US 1980-217747	A1 198012 18

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB Polymeric dyes [I; R = H, Cl, Br, OH, C1-8 alkyl, NO₂, C1-8 alkoxy, C1-8 alkoxy carbonyl, CN, CO₂H, optionally substituted carbamoyl or amino; R1 = H, Cl, OH, C1-4 alkyl, C1-4 alkoxy; (or RR1 = optionally substituted condensed annelated ring, or RZ or R1Z = a heterocyclic

residue; Z, Z2 = optionally quaternized bridging group; Z1 = optionally quaternized active methylene compd. residue; X- = anion, $n > 1$; m as necessary to balance charge of quaternized groups] are prepd. and are useful to dye paper yellow to orange shades. Thus, oligomeric to polymeric II [76257-26-6], prepd. by condensation of 4-OHCC6H4NMeCH2CH2NMeC6H4CHO-4 with the corresponding quaternary heterocycle in ethylene glycol in the presence of pyrrolidine, has good H2O soly. and storage stability, dyeing paper in yellow shades with the wastewater being weakly colored or colorless. Eight other I were similarly prepd.

IT 76257-26-6

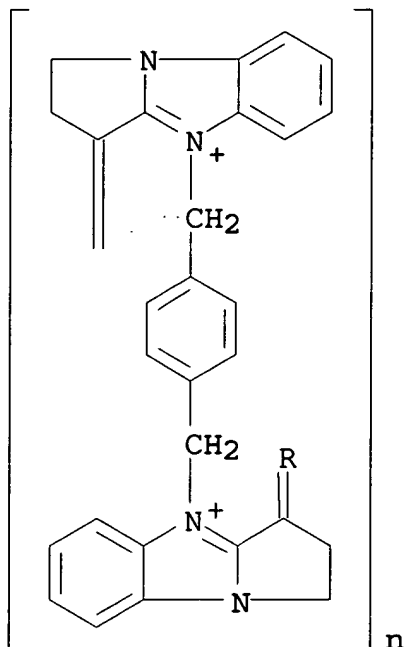
RL: USES (Uses)

(dye, for paper, prepn. of)

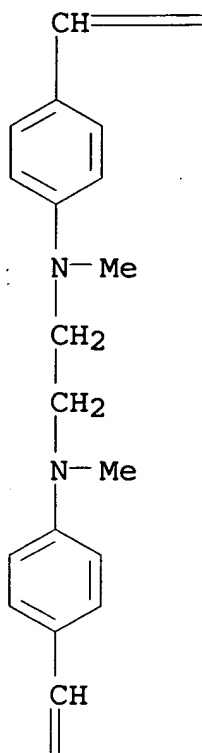
RN 76257-26-6 HCAPLUS

CN Poly[(1,2-dihydro-3H-pyrrolo[1,2-a]benzimidazolium-4-yl-3-ylidene)methylene-1,4-phenylenemethylene(1,2-dihydro-3H-pyrrolo[1,2-a]benzimidazolium-4-yl-3-ylidene)methylidyne-1,4-phenylene(methylimino)-1,2-ethanediyl(methylimino)-1,4-phenylenemethylidyne dichloride] (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



PAGE 3-A

$$\begin{array}{c} || \\ R \end{array}$$
● 2 Cl⁻

IC	C09B023-00				
CC	40-9 (Dyes, Fluorescent Whitening Agents, and Photosensitizers)				
IT	76245-70-0	76245-72-2	76245-73-3	76245-74-4	76245-78-8
	76245-80-2	76245-82-4	76245-83-5	76245-85-7	76246-19-0
	76246-20-3	76246-22-5	76246-23-6	76246-24-7	76246-25-8

76246-26-9 76257-26-6 76257-27-7

RL: USES (Uses)

(dye, for paper, prepn. of)

L39 ANSWER 10 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1980:606156 HCAPLUS

DOCUMENT NUMBER: 93:206156

TITLE: Basic dyes

INVENTOR(S): Degen, Hans Juergen; Grychtol, Klaus

PATENT ASSIGNEE(S): BASF A.-G., Fed. Rep. Ger.

SOURCE: Ger. Offen., 27 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

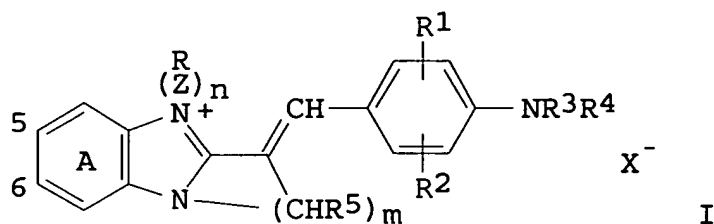
LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO. -----	KIND ----	DATE -----	APPLICATION NO. -----	DATE
DE 2902763	A1	19800807	DE 1979-2902763	197901 25
US 4276415	A	19810630	US 1980-109045	198001 02
EP 13899	A2	19800806	EP 1980-100085	198001 09
EP 13899	A3	19810128		
R: BE, CH, DE, FR, GB, IT				
JP 55099955	A2	19800730	JP 1980-5881	198001 23
PRIORITY APPLN. INFO.:			DE 1979-2902763	A 197901 25

GI



AB Basic dyes (I; R = optionally substituted alkyl, heterocyclylimmonium; R1 = H, Me, Et, OH, MeO, EtO; R2 = H, Cl, Me, Et; R3 = H, optionally substituted alkyl; R4 = amino group-contg. residue; R5 = H, C1-4 alkyl; Z = bridging group; n = 0, 1; m = 2, 3, 4; X- = anion; ring A may be further substituted) are prepd. and used to dye paper in fast yellow to red shades. Thus, a mixt. of p-xylylene dichloride [623-25-6] and 5- [10252-94-5] and 6-methylpyrrolidino[1,2-a]benzimidazole [59007-79-3] was heated in ethylene glycol, ethylenediamine [107-15-3] and p-(dimethylamino)benzaldehyde [100-10-7] were added, and the mixt. was heated to give I (R = 4-H2NCH2CH2NHCH2C6H4; R1 = R2 = R5 = H, R3 = R4 = Me, Z = CH2, n = 1, m = 2, ring A 5-Me substituted, X = Cl) (II) [75447-06-2] and the 6-Me isomer [75447-07-3] of II.

IT 75447-04-0 75447-05-1 75447-06-2
75447-07-3

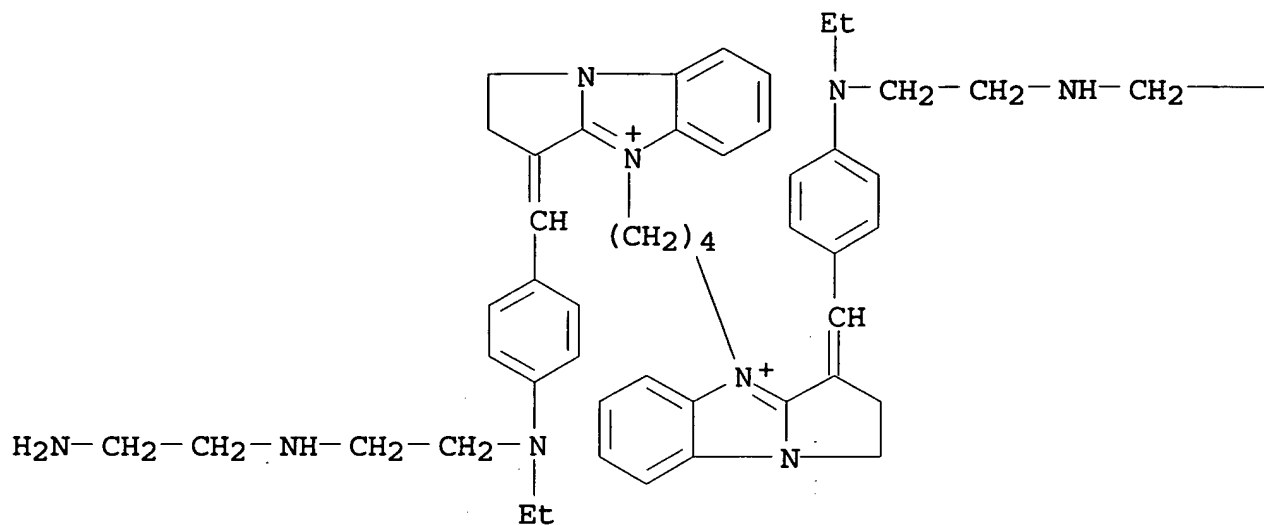
RL: USES (Uses)

(dye, for paper, prepn. of)

RN 75447-04-0 HCAPLUS

CN 1H-Pyrrolo[1,2-a]benzimidazolium, 4,4'-(1,4-butanediyl)bis[3-[[4-[[2-[(2-aminoethyl)amino]ethyl]ethylamino]phenyl]methylene]-2,3-dihydro-, dichloride (9CI) (CA INDEX NAME)

PAGE 1-A

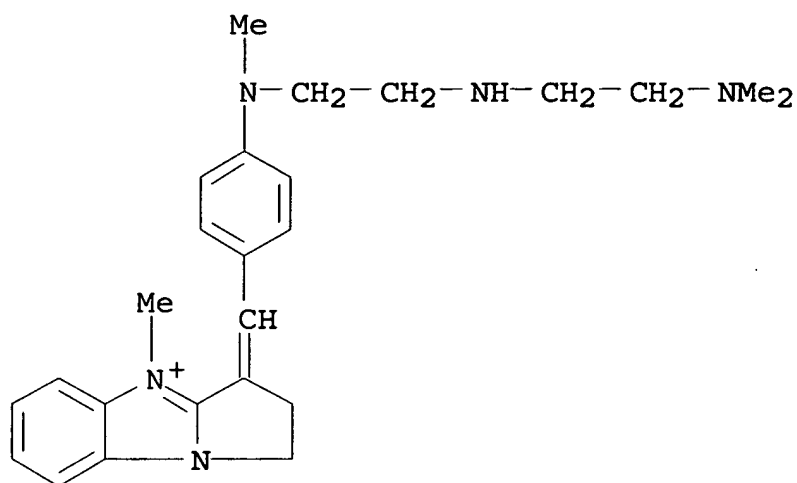
● 2 Cl⁻

PAGE 1-B

—CH₂—NH₂

RN 75447-05-1 HCAPLUS

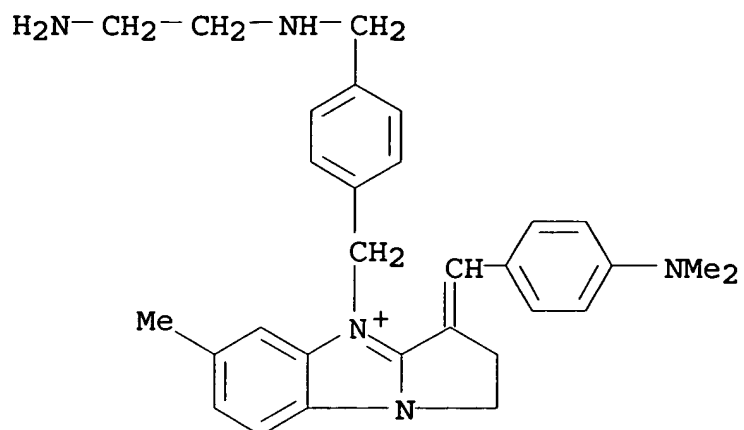
CN 1H-Pyrrolo[1,2-a]benzimidazolium, 3-[[4-[[2-[[2-(dimethylamino)ethyl]amino]ethyl]methylamino]phenyl]methylene]-2,3-dihydro-4-methyl-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

RN 75447-06-2 HCAPLUS

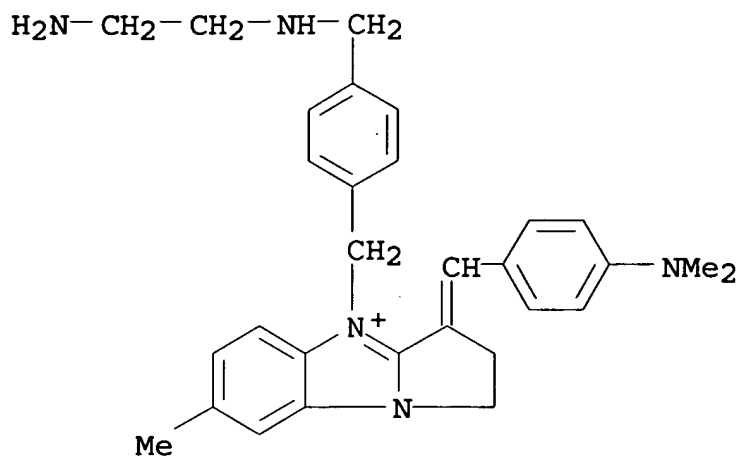
CN 1H-Pyrrolo[1,2-a]benzimidazolium, 4-[[4-[[[(2-aminoethyl)amino]methyl]phenyl]methyl]-3-[[4-(dimethylamino)phenyl]methylene]-2,3-dihydro-6-methyl-, chloride
(9CI) (CA INDEX NAME)



● Cl⁻

RN 75447-07-3 HCAPLUS

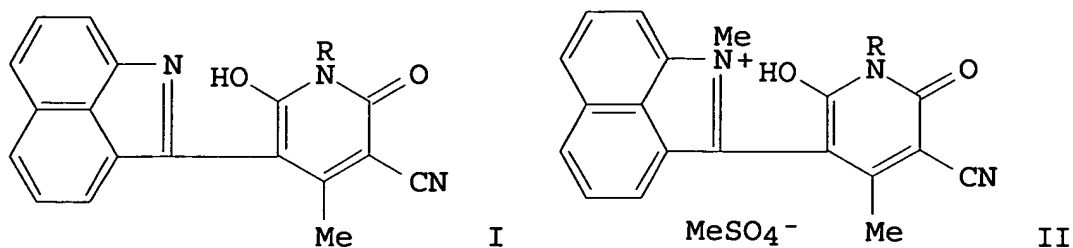
CN 1H-Pyrrolo[1,2-a]benzimidazolium, 4-[[4-[(2-aminoethyl)amino]methyl]phenyl]methyl]-3-[[4-(dimethylamino)phenyl]methylene]-2,3-dihydro-7-methyl-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

IC C09B023-02; C09B057-00
 CC 40-7 (Dyes, Fluorescent Whitening Agents, and Photosensitizers)
 IT 75447-04-0 75447-05-1 75447-06-2
 75447-07-3
 RL: USES (Uses)
 (dye, for paper, prepn. of)

L39 ANSWER 11 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1979:559022 HCAPLUS
 DOCUMENT NUMBER: 91:159022
 TITLE: Applications of NMR spectroscopy and mass spectrometry to some problems concerning synthetic dyes: Part XXI. Naphthostyryl dyes for polyester and polyacrylonitrile fibers
 AUTHOR(S): Ayyangar, N. R.; Lahoti, R. J.; Wagle, D. R.
 CORPORATE SOURCE: Natl. Chem. Lab., Poona, 411008, India
 SOURCE: Indian Journal of Chemistry, Section B: Organic Chemistry Including Medicinal Chemistry (1979), 17B(2), 140-2
 CODEN: IJSBDB; ISSN: 0376-4699
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 GI



AB Condensation of naphthostyryl [130-00-7] with 2-pyridones gave I (R = Me, Et, o-MeC₆H₄, o-MeOC₆H₄), fast violet dyes for polyester fibers. Quaternization of I with Me₂SO₄ produced violet cationic dyes (II; R as defined) which, however, showed poor dyeing properties on acrylic fibers. The NMR, mass, and electronic spectra of I are discussed.

IT 71716-11-5P 71716-13-7P

RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn., spectra and dyeing properties on acrylic fibers)

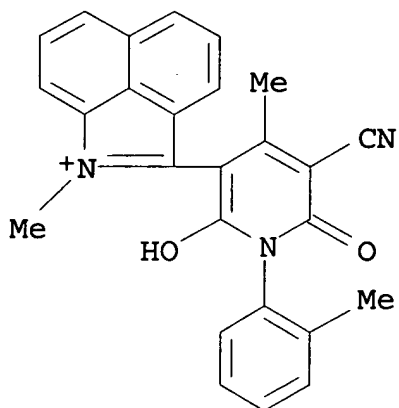
RN 71716-11-5 HCAPLUS

CN Benz[cd]indolium, 2-[5-cyano-1,6-dihydro-2-hydroxy-4-methyl-1-(2-methylphenyl)-6-oxo-3-pyridinyl]-1-methyl-, methyl sulfate (salt) (9CI) (CA INDEX NAME)

CM 1

CRN 71716-10-4

CMF C26 H20 N3 O2



CM 2

CRN 21228-90-0

CMF C H3 O4 S

Me-O-SO₃⁻

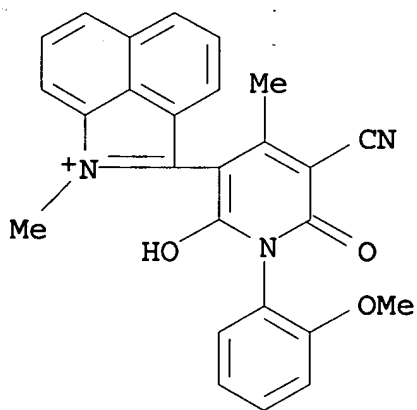
RN 71716-13-7 HCAPLUS

CN Benz[cd]indolium, 2-[5-cyano-1,6-dihydro-2-hydroxy-1-(2-methoxyphenyl)-4-methyl-6-oxo-3-pyridinyl]-1-methyl-, methyl sulfate (salt) (9CI) (CA INDEX NAME)

CM 1

CRN 71716-12-6

CMF C26 H20 N3 O3



CM 2

CRN 21228-90-0

CMF C H3 O4 S

Me-O-SO₃⁻

CC 40-9 (Dyes, Fluorescent Whitening Agents, and Photosensitizers)
 IT 71716-07-9P 71716-09-1P 71716-11-5P 71716-13-7P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (prepn., spectra and dyeing properties on acrylic fibers)

L39 ANSWER 12 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1979:170160 HCAPLUS
 DOCUMENT NUMBER: 90:170160
 TITLE: Cationic dyes
 INVENTOR(S): Degen, Hans Juergen; Grychtol, Klaus
 PATENT ASSIGNEE(S): BASF A.-G., Fed. Rep. Ger.
 SOURCE: Ger. Offen., 19 pp.
 CODEN: GWXXBX
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO. -----	KIND ----	DATE -----	APPLICATION NO. -----	DATE
DE 2733468	A1	19790215	DE 1977-2733468	197707 25
CA 1114559	A1	19811222	CA 1978-307757	197807 20
CH 638553	A	19830930	CH 1978-7929	197807 21
BE 869240	A1	19790125	BE 1978-189476	197807 25
GB 2002424	A	19790221	GB 1978-31008	197807 25
GB 2002424	B2	19820324		
JP 54023632	A2	19790222	JP 1978-90031	197807 25
FR 2398786	A1	19790223	FR 1978-21902	197807 25
FR 2398786	B1	19830923		
US 4212644	A	19800715	US 1978-927947	

197807
25

GB 2056475

A

19810318

GB 1980-29734

197807
25

GB 2056475

B2

19820714

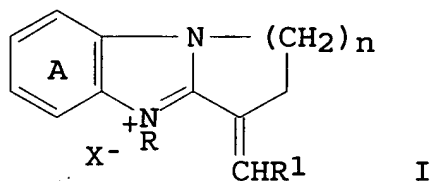
PRIORITY APPLN. INFO.:

DE 1977-2733468

A

197707
25

GI



AB Cationic dyes (I, R = optionally substituted alkyl; R1 = optionally substituted aminoaryl; n = 1, 2, 3; X = anion; ring A may be optionally substituted) were prepd. and were useful for dyeing anionic group-contg. fibers and paper yellow to orange shades.. Thus, 4-methylpyrrolidino[1,2-a]benzenedazolium methosulfate [69829-11-4] was heated with p-(dimethylamino)benzaldehyde [100-10-7] to give I (R = Me, R1 = p-(Me2N)C6H4, n = 1, X = MeSO4) [69850-24-4].

IT 69829-13-6P 69829-15-8P 69829-17-0P
69829-19-2P 69829-20-5P 69829-23-8P
69829-25-0P 69850-24-4P

RL: IMF (Industrial manufacture); PREP (Preparation)
(prepn. of)

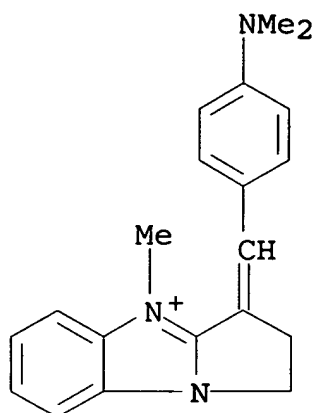
RN 69829-13-6 HCAPLUS

CN 1H-Pyrrolo[1,2-a]benzimidazolium, 3-[[4-(dimethylamino)phenyl]methylene]-2,3-dihydro-4-methyl-, acetate
(9CI) (CA INDEX NAME)

CM 1

CRN 69829-12-5

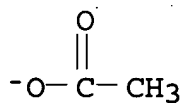
CMF C20 H22 N3



CM 2

CRN 71-50-1

CMF C2 H3 O2



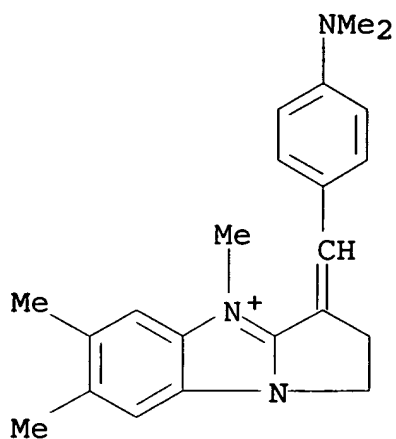
RN 69829-15-8 HCAPLUS

CN 1H-Pyrrolo[1,2-a]benzimidazolium, 3-[[4-(dimethylamino)phenyl]methylene]-2,3-dihydro-4,6,7-trimethyl-, acetate (9CI) (CA INDEX NAME)

CM 1

CRN 69829-14-7

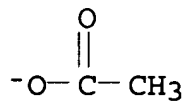
CMF C22 H26 N3



CM 2

CRN 71-50-1

CMF C2 H3 O2



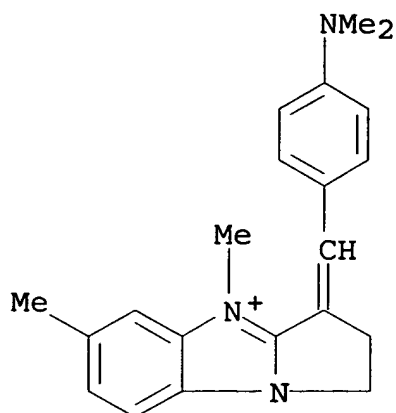
RN 69829-17-0 HCAPLUS

CN 1H-Pyrrolo[1,2-a]benzimidazolium, 3-[[4-(dimethylamino)phenyl]methylene]-2,3-dihydro-4,6-dimethyl-, methyl sulfate (9CI) (CA INDEX NAME)

CM 1

CRN 69829-16-9

CMF C21 H24 N3



CM 2

CRN 21228-90-0

CMF C H3 O4 S

Me-O-SO₃⁻

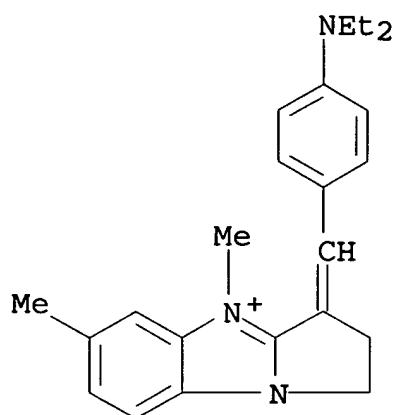
RN 69829-19-2 HCAPLUS

CN 1H-Pyrrolo[1,2-a]benzimidazolium, 3-[[4-(diethylamino)phenyl]methylene]-2,3-dihydro-4,6-dimethyl-, methyl sulfate (9CI) (CA INDEX NAME)

CM 1

CRN 69829-18-1

CMF C23 H28 N3



CM 2

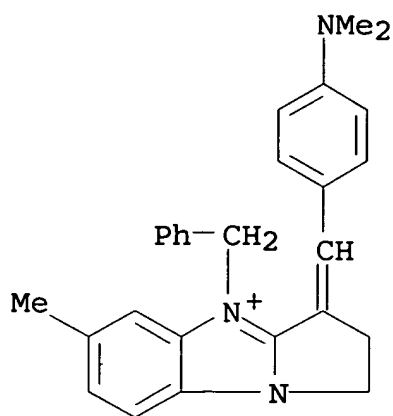
CRN 21228-90-0

CMF C H3 O4 S

Me-O-SO₃⁻

RN 69829-20-5 HCAPLUS

CN 1H-Pyrrolo[1,2-a]benzimidazolium, 3-[[4-(dimethylamino)phenyl]methylene]-2,3-dihydro-6-methyl-4-(phenylmethyl)-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

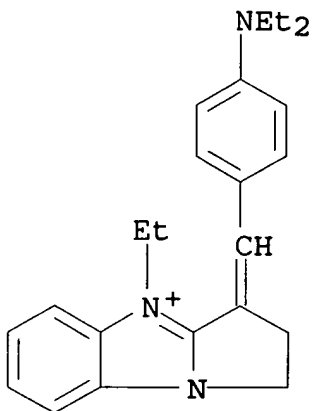
RN 69829-23-8 HCAPLUS

CN 1H-Pyrrolo[1,2-a]benzimidazolium, 3-[[4-(diethylamino)phenyl]methylene]-4-ethyl-2,3-dihydro-, ethyl sulfate (9CI) (CA INDEX NAME)

CM 1

CRN 69829-22-7

CMF C23 H28 N3



CM 2

CRN 48028-76-8

CMF C2 H5 O4 S

Et-O-SO₃⁻

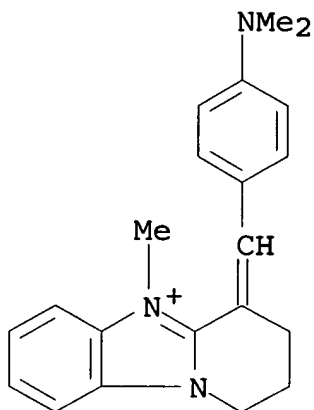
RN 69829-25-0 HCAPLUS

CN Pyrido[1,2-a]benzimidazolium, 4-[[4-(dimethylamino)phenyl]methylene]-
1,2,3,4-tetrahydro-5-methyl-, methyl sulfate (9CI) (CA INDEX NAME)

CM 1

CRN 69829-24-9

CMF C21 H24 N3



CM 2

CRN 21228-90-0

CMF C H3 O4 S

Me-O-SO₃⁻

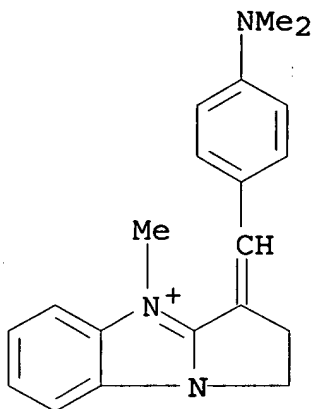
RN 69850-24-4 HCAPLUS

CN 1H-Pyrrolo[1,2-a]benzimidazolium, 3-[[4-(dimethylamino)phenyl]methylene]-2,3-dihydro-4-methyl-, methyl sulfate (9CI) (CA INDEX NAME)

CM 1

CRN 69829-12-5

CMF C20 H22 N3



CM 2

CRN 21228-90-0

CMF C H3 O4 S

Me-O-SO₃⁻

IC C09B057-00

CC 40-6 (Dyes, Fluorescent Whitening Agents, and Photosensitizers)

IT 69829-13-6P 69829-15-8P 69829-17-0P

69829-19-2P 69829-20-5P 69829-23-8P

69829-25-0P 69850-24-4P

RL: IMF (Industrial manufacture); PREP (Preparation)
(prepn. of)

L39 ANSWER 13 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN

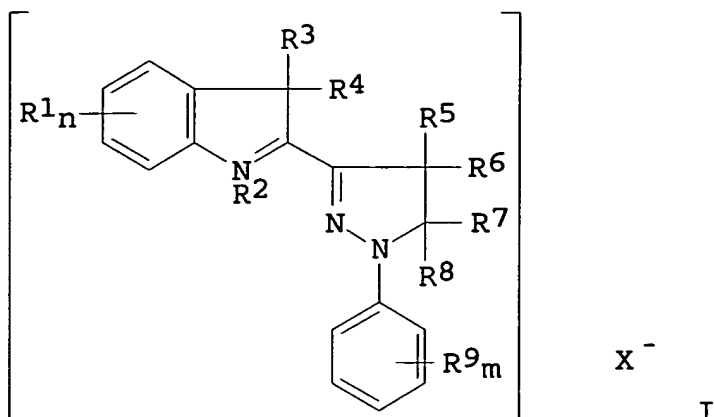
ACCESSION NUMBER: 1978:426024 HCAPLUS

DOCUMENT NUMBER: 89:26024

TITLE: Methine dyes
 INVENTOR(S): Psaar, Hubertus; Kruckenberg, Winfried
 PATENT ASSIGNEE(S): Bayer A.-G., Fed. Rep. Ger.
 SOURCE: Ger. Offen., 34 pp.
 CODEN: GWXXBX
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO. -----	KIND ----	DATE -----	APPLICATION NO. -----	DATE
DE 2638232	A1	19780309	DE 1976-2638232	197608 25
JP 53026824	A2	19780313	JP 1977-100235	197708 23
US 4143228	A	19790306	US 1977-826999	197708 23
GB 1544721	A	19790425	GB 1977-35290	197708 23
CH 634865	A	19830228	CH 1977-10320	197708 23
FR 2362901	A1	19780324	FR 1977-25996	197708 25
FR 2362901	B1	19801205		
PRIORITY APPLN. INFO.:			DE 1976-2638232	A 197608 25

GI



AB Dyes [I; R1 = halogen, alkyl, cycloalkyl, NO₂, CN, acylamino, amino, substituted alkyl, etc.; R2 = alkyl, alkenyl, cycloalkyl, aryl, aralkyl; R3, R4 = alkyl, cycloalkyl, aralkyl; R5, R6, R7, R8 = H, alkyl, cycloalkyl, aralkyl, aryl; R6R7 = cycloaliph. ring; R9 = Cl, Br, NO₂, CN, C1-4 alkyl, Ph, PhCH₂, alkoxy, phenoxy, amino derivs., carbonyl derivs., etc.; and ≥1 R1R2R9 = ZO(Z1O)pR10, ZO2CZ2(Z1O)pR10, Z(OZ2)qCO2(Z1O)pR10 where Z = alkylene or direct bond; Z1 = alkylene; Z2 = optionally substituted alkylene; R10 = alkyl, alkenyl, cycloalkyl, or their substituted derivs.; m = 1, 2, 3; n = 0, 1, 2; p = 1-5; q = 0-1; X = anion] are prepd. and used to dye acrylic fibers fast orange to red shades. Thus, 4-[2-(2-methoxyethoxy)ethoxy]aniline [65673-48-5] was dissolved in aq. HCl, diazotized, coupled with 1,3,3-trimethyl-2-(3-chloropropylidene)indoline [61519-42-4], and salted to give I (R1, R5, R6, R7, R8 = H; R2, R3, R4 = Me; R9 = 4-MeOCH₂CH₂OCH₂CH₂O; X = Cl) [66448-05-3].

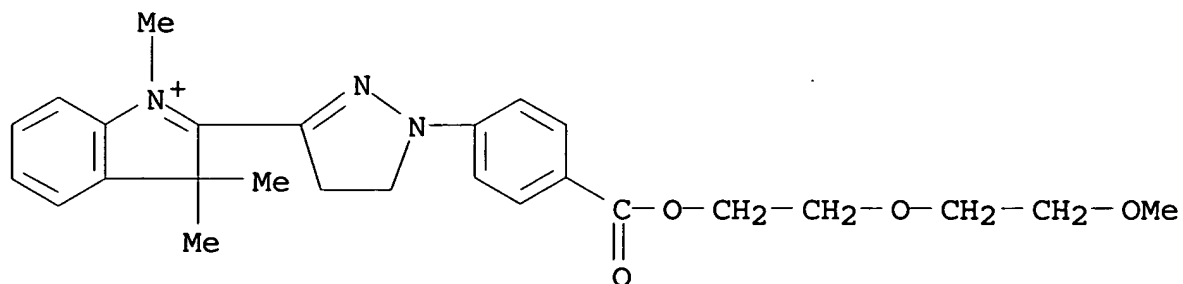
IT 66448-04-2 66448-05-3

RL: USES (Uses)

(dye, for acrylic fibers, prepn. of)

RN 66448-04-2 HCAPLUS

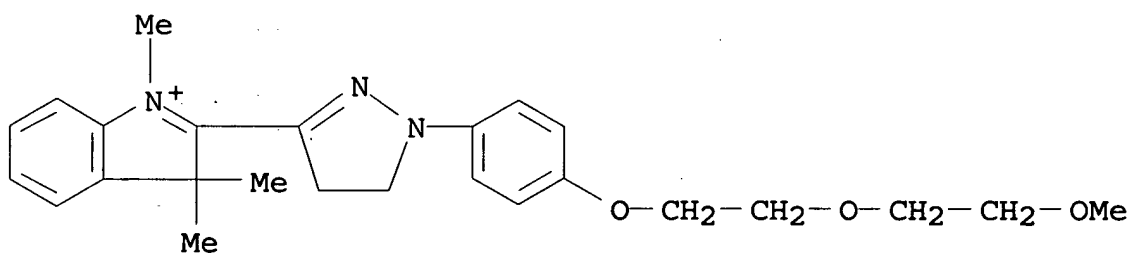
CN 3H-Indolium, 2-[4,5-dihydro-1-[4-[[2-(2-methoxyethoxy)ethoxy]carbonyl]phenyl]-1H-pyrazol-3-yl]-1,3,3-trimethyl-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

RN 66448-05-3 HCAPLUS

CN 3H-Indolium, 2-[4,5-dihydro-1-[4-[2-(2-methoxyethoxy)ethoxy]phenyl]-1H-pyrazol-3-yl]-1,3,3-trimethyl-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

IC C09B023-00

CC 40-7 (Dyes, Fluorescent Whitening Agents, and Photosensitizers)

IT 66448-04-2 66448-05-3

RL: USES (Uses)

(dye, for acrylic fibers, prepn. of)

L39 ANSWER 14 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN

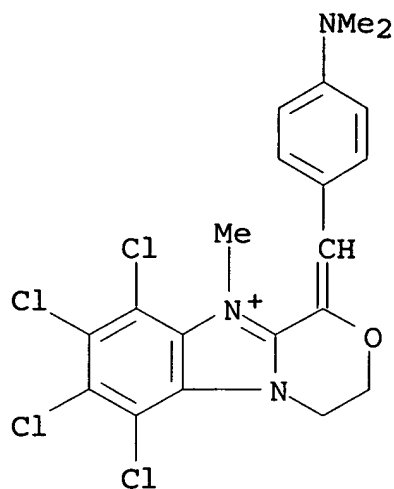
ACCESSION NUMBER: 1978:128979 HCAPLUS

DOCUMENT NUMBER: 88:128979

TITLE: Cyanine and merocyanine type dyes with nuclei

derived from benzimidazole or
imidazo[4,5-b]pyridine ring systems
AUTHOR(S): Anderson, Richard B.; Heseltine, Donald W.
CORPORATE SOURCE: UK
SOURCE: Research Disclosure (1977), 164, 91-4 (No.
16477)
CODEN: RSDSBB; ISSN: 0374-4353
DOCUMENT TYPE: Journal; Patent
LANGUAGE: English
PATENT INFORMATION:

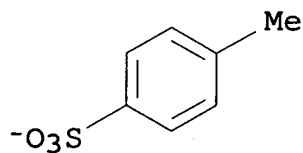
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	---	-----	-----	---
RD 164077		19771210		
PRIORITY APPLN. INFO.: 19771210			RD 1977-164077	
AB				Cyanine- and merocyanine-type dyes are described which contain nuclei derived from imidazo[4,5-b]pyridine, esp. tetrachloro-substituted benzimidazol or trichloro-substituted imidazo[4,5-b]pyridine. The dyes are nonaggregating and are useful as spectral sensitizers for photog. Ag halide emulsions. Some 16 dyes are prepd. and described.
IT				65763-79-3 RL: TEM (Technical or engineered material use); USES (Uses) (photog. spectral sensitizer)
RN				65763-79-3 HCAPLUS
CN				1H-[1,4]Oxazino[4,3-a]benzimidazolium, 6,7,8,9-tetrachloro-1-[[4-(dimethylamino)phenyl]methylene]-3,4-dihydro-10-methyl-, salt with 4-methylbenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)
CM				1
CRN				65763-78-2
CMF				C20 H18 Cl4 N3 O



CM 2

CRN 16722-51-3

CMF C7 H7 O3 S



CC 74-2 (Radiation Chemistry, Photochemistry, and Photographic Processes)

Section cross-reference(s): 40

IT 65763-69-1 65763-70-4 65763-71-5 65763-72-6 65763-74-8
 65763-75-9 65763-76-0 65763-77-1 **65763-79-3**
 65763-80-6 65763-81-7 65763-82-8 65763-83-9 65763-89-5
 65814-94-0 66010-64-8

RL: TEM (Technical or engineered material use); USES (Uses)
 (photog. spectral sensitizer)

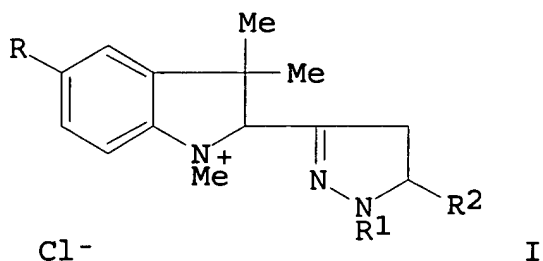
L39 ANSWER 15 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1977:56757 HCAPLUS
 DOCUMENT NUMBER: 86:56757
 TITLE: Methine dyes

INVENTOR(S) : Psaar, Hubertus
 PATENT ASSIGNEE(S) : Bayer A.-G., Fed. Rep. Ger.
 SOURCE: Ger. Offen., 57 pp.
 CODEN: GWXXBX
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO. -----	KIND ----	DATE -----	APPLICATION NO. -----	DATE
DE 2520816	A1	19761118	DE 1975-2520816	197505 09
DE 2520816	C3	19790215		
CH 603898	B	19780831	CH 1976-5641	197605 05
CH 606287	A	19781031	CH 1976-10562	197605 05
US 4138570	A	19790206	US 1976-683622	197605 05
GB 1520165	A	19780802	GB 1976-18626	197605 06
GB 1520166	A	19780802	GB 1977-49166	197605 06
BR 7602889	A	19761123	BR 1976-2889	197605 07
JP 51136723	A2	19761126	JP 1976-51390	197605 07
JP 56040178	B4	19810918		
FR 2310391	A1	19761203	FR 1976-13868	197605 07
FR 2310391	B1	19850614		
ES 447674	A1	19770616	ES 1976-447674	197605 07

DD 127657	C	19771005	DD 1976-192732	197605 07
PL 102326	P	19790331	PL 1976-189387	197605 07
US 4201707	A	19800506	US 1978-919311	197806 26
JP 55153764	A2	19801129	JP 1980-45282	198004 08
JP 60007980	B4	19850228		
PRIORITY APPLN. INFO.:			DE 1975-2520816	A 197505 09
			US 1976-683622	A3 197605 05

GI



AB Methine dyes (I, R = H, Cl; R1 = Ph, substituted Ph; R2 = H, Me) were prepd. and used to dye acrylic and acid-modified polyamide and polyester fibers fast orange to red shades. Thus, PhNH₂ [62-53-3] was diazotized, coupled with 1,3,3-trimethyl-2-(3-chloropropylidene)indoline [61519-42-4], and NaOAc and NaCl added to give I (R = R2 = H, R1 = Ph) [61537-98-2], orange on acrylic fibers. The other I were similarly prepd.

IT 61519-44-6 61519-46-8 61537-97-1

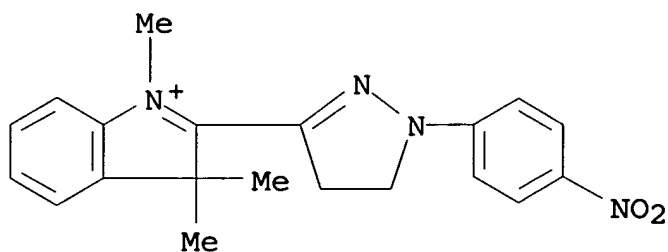
61537-98-2

RL: USES (Uses)

(dye, for acrylic fibers, prepn. of)

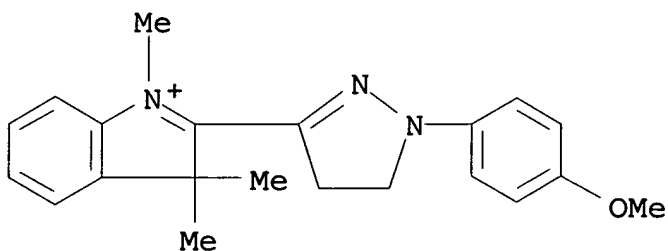
RN 61519-44-6 HCAPLUS

CN 3H-Indolium, 2-[4,5-dihydro-1-(4-nitrophenyl)-1H-pyrazol-3-yl]-1,3,3-trimethyl-, chloride (9CI) (CA INDEX NAME)

● Cl⁻

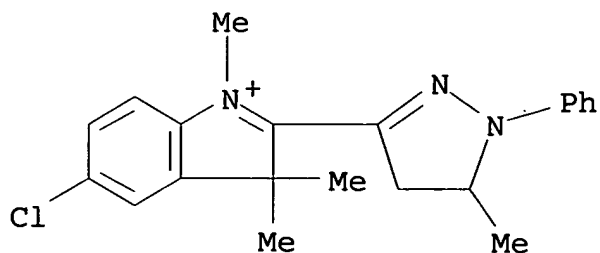
RN 61519-46-8 HCAPLUS

CN 3H-Indolium, 2-[4,5-dihydro-1-(4-methoxyphenyl)-1H-pyrazol-3-yl]-1,3,3-trimethyl-, chloride (9CI) (CA INDEX NAME)

● Cl⁻

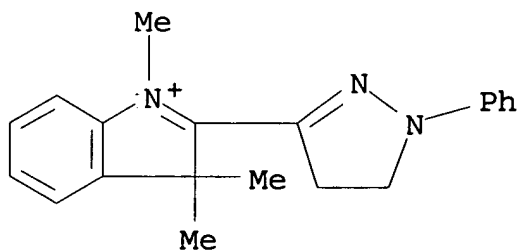
RN 61537-97-1 HCAPLUS

CN 3H-Indolium, 5-chloro-2-(4,5-dihydro-5-methyl-1-phenyl-1H-pyrazol-3-yl)-1,3,3-trimethyl-, chloride (9CI) (CA INDEX NAME)



RN 61537-98-2 HCAPLUS

CN 3H-Indolium, 2-(4,5-dihydro-1-phenyl-1H-pyrazol-3-yl)-1,3,3-trimethyl-, chloride (9CI) (CA INDEX NAME)



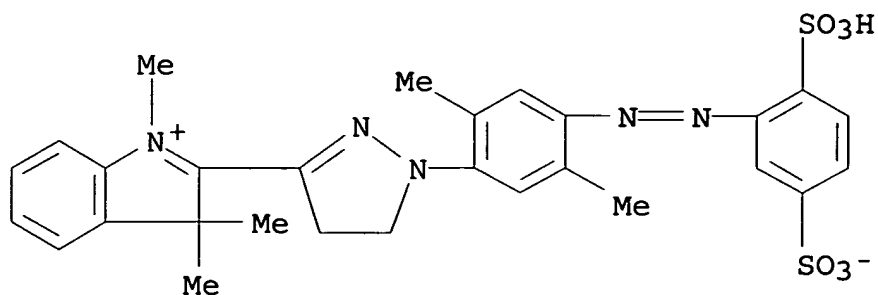
IT 61519-49-1

RL: USES (Uses)

(dye, for polyamide fibers, prepn. of)

RN 61519-49-1 HCAPLUS

CN 3H-Indolium, 2-[1-[4-[(2,5-disulfophenyl)azo]-2,5-dimethylphenyl]-4,5-dihydro-1H-pyrazol-3-yl]-1,3,3-trimethyl-, inner salt (9CI) (CA INDEX NAME)



IC C09B055-00
 CC 40-7 (Dyes, Fluorescent Whitening Agents, and Photosensitizers)
 IT 61519-44-6 61519-46-8 61537-97-1
 61537-98-2
 RL: USES (Uses)
 (dye, for acrylic fibers, prepn. of)
 IT 61519-49-1
 RL: USES (Uses)
 (dye, for polyamide fibers, prepn. of)

L39 ANSWER 16 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1976:464804 HCAPLUS
 DOCUMENT NUMBER: 85:64804
 TITLE: Methine dyes
 INVENTOR(S): Libeer, Marcel J.; Depoorter, Henri; Van Mierlo,
 Gerrit G.; Lemahieu, Raymond G.
 PATENT ASSIGNEE(S): Agfa-Gevaert N. V., Belg.
 SOURCE: U.S., 46 pp.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3931156	A	19760106	US 1973-355770	197304 30
PRIORITY APPLN. INFO.:			GB 1961-19269	A 196105 29

US 1962-197925

A3

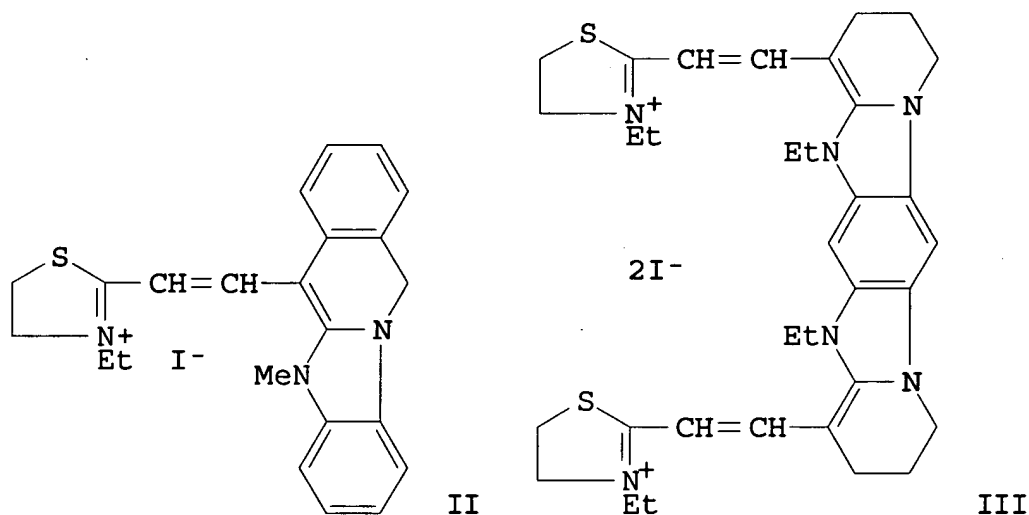
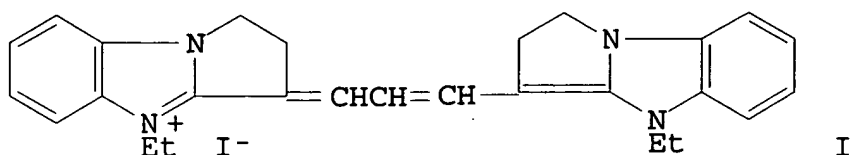
196205
28

US 1966-547140

A1

196602
02

GI

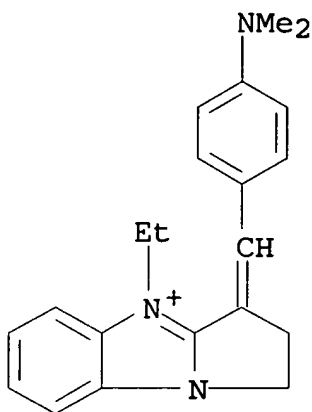


AB One hundred thirty-four cyanine dyes contg. the pyrrolobenzimidazole, benzimidazoloisoquinoline, and dipyridinolbenzodimidazole nuclei were prepd. and their photosensitizing properties detd. in Ag halide emulsions. The syntheses of the heterocyclic nuclei and the cyanine dyes derived from them were given. Representative dye structure are: I [59506-84-2], II [59506-85-3], and III [59506-86-4].

IT 59506-69-3P

RL: SPN (Synthetic preparation); PREP (Preparation)
(prep. and photosensitizing properties of)

RN 59506-69-3 HCAPLUS

CN 1H-Pyrrolo[1,2-a]benzimidazolium, 3-[[4-(dimethylamino)phenyl]methylene]-4-ethyl-2,3-dihydro-, iodide (9CI)
(CA INDEX NAME)● I⁻

IC C09B

INCL 260240400

CC 40-12 (Dyes, Fluorescent Whitening Agents, and Photosensitizers)
Section cross-reference(s): 28

IT	615-16-7P	1426-99-9P	1495-08-5P	2925-72-6P	14690-50-7P
	59505-47-4P	59505-48-5P	59505-49-6P	59505-50-9P	59505-52-1P
	59505-53-2P	59505-54-3P	59505-55-4P	59505-56-5P	59505-57-6P
	59505-58-7P	59505-59-8P	59505-60-1P	59505-61-2P	59505-62-3P
	59505-63-4P	59505-64-5P	59505-65-6P	59505-66-7P	59505-67-8P
	59505-68-9P	59505-69-0P	59505-70-3P	59505-71-4P	59505-72-5P
	59505-73-6P	59505-74-7P	59505-75-8P	59505-76-9P	59505-77-0P
	59505-78-1P	59505-79-2P	59505-80-5P	59505-81-6P	59505-82-7P
	59505-83-8P	59505-84-9P	59505-85-0P	59505-86-1P	59505-87-2P
	59505-88-3P	59505-89-4P	59505-91-8P	59505-92-9P	59505-93-0P
	59505-94-1P	59505-95-2P	59505-96-3P	59505-97-4P	59505-98-5P
	59506-00-2P	59506-02-4P	59506-03-5P	59506-04-6P	59506-05-7P
	59506-06-8P	59506-07-9P	59506-08-0P	59506-09-1P	59506-10-4P

59506-11-5P	59506-12-6P	59506-14-8P	59506-15-9P	59506-16-0P
59506-17-1P	59506-18-2P	59506-19-3P	59506-20-6P	59506-21-7P
59506-22-8P	59506-23-9P	59506-24-0P	59506-25-1P	59506-26-2P
59506-27-3P	59506-28-4P	59506-29-5P	59506-30-8P	59506-31-9P
59506-32-0P	59506-33-1P	59506-34-2P	59506-36-4P	59506-37-5P
59506-38-6P	59506-39-7P	59506-40-0P	59506-41-1P	59506-42-2P
59506-43-3P	59506-44-4P	59506-45-5P	59506-46-6P	59506-47-7P
59506-48-8P	59506-49-9P	59506-50-2P	59506-51-3P	59506-52-4P
59506-53-5P	59506-54-6P	59506-55-7P	59506-56-8P	59506-57-9P
59506-58-0P	59506-59-1P	59506-60-4P	59506-61-5P	59506-62-6P
59506-63-7P	59506-64-8P	59506-65-9P	59506-66-0P	59506-67-1P
59506-68-2P	59506-69-3P	59506-70-6P	59506-71-7P	
59506-72-8P	59506-80-8P	59506-84-2P	59506-85-3P	59506-86-4P
59547-17-0P	59547-19-2P			

RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and photosensitizing properties of)

L39 ANSWER 17 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1974:419269 HCAPLUS
DOCUMENT NUMBER: 81:19269
TITLE: Sensitizers for n-type organic photoconductors
INVENTOR(S): Jones, Jean Elmore
PATENT ASSIGNEE(S): Eastman Kodak Co.
SOURCE: U.S., 8 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	
US 3796573	A	19740312	US 1972-259706	197206 05
PRIORITY APPLN. INFO.:			US 1972-259706	A 197206 05

AB Electrophotog. photoconductive compns. contg. n-type org. photoconductors, esp. 2,4,7-trinitro-9-fluorenone (I), and polymeric binders are sensitized with cyanine, merocyanine, and styryl dyes selected on the basis of having a cathodic polarog. half-wave potential more neg. than - 1.0 V, a sum anodic-cathodic half-wave

potential more neg. than 0.00 V, and a specified low degree of Ag(Br, I)-gelatin emulsion desensitization. Thus, a conductive poly(ethylene terephthalate) support was coated with a compn. contg. I 0.6, poly(4,4'-isopropylidenebisphenoxy-ethyl-o-ethylene terephthalate) 1.4, 3,3'-diethyl-9-methylthia-carbocyanine p-toluenesulfonate 0.02 g, and CH₂Cl₂ 16 ml to give the electrophotog. sheet.

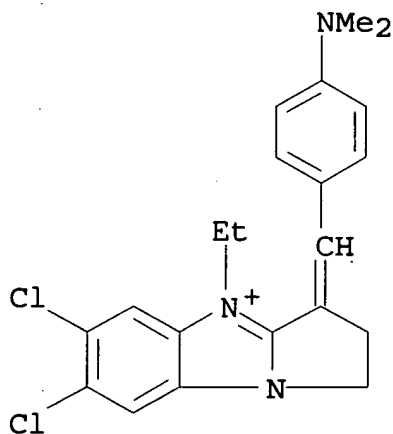
IT 14318-07-1

RL: USES (Uses)

(electrophotog. trinitrofluorenone photoconductive compn. sensitization by)

RN 14318-07-1 HCAPLUS

CN 1H-Pyrrolo[1,2-a]benzimidazolium, 6,7-dichloro-3-[p-(dimethylamino)benzylidene]-4-ethyl-2,3-dihydro-, iodide (8CI) (CA INDEX NAME)



● I⁻

IC G03G

INCL 096001600

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic Processes)

IT 514-73-8 988-93-2 3024-56-4 14318-07-1 15086-20-1
15185-43-0 16055-33-7 18420-49-0 52810-98-7 52811-00-4
52811-02-6 52811-03-7 52811-04-8

RL: USES (Uses)

(electrophotog. trinitrofluorenone photoconductive compn.)

sensitization by)

L39 ANSWER 18 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1968:460031 HCAPLUS

DOCUMENT NUMBER: 69:60031

TITLE: Isoelectronic analogs of indoline. V.
Derivatives of pyrrolo [1,2-a] benzimidazole

AUTHOR(S): Babichev, F. S.; Babicheva, A. F.

CORPORATE SOURCE: Kiev. Gos. Univ. im. Shevchenko, Kiev, USSR

SOURCE: Khimiya Geterotsiklicheskikh Soedinenii (1967),
(5), 917-22

CODEN: KGSSAQ; ISSN: 0132-6244

DOCUMENT TYPE: Journal

LANGUAGE: Russian

GI For diagram(s), see printed CA Issue.

AB 1,2-Dialkylbenzimidazole quaternary salts (I) (prepd. from 1,2-dialkylbenzimidazoles and α -halo ketones) heated with a soln. of Na_2CO_3 led to the title compds. (II). Their salts gave 2 series of cyanine dyes bridged in the 1,1'- and 3,3'-positions, resp. Thus, a soln. of 2 g. 1,2-dimethylbenzimidazole and 1.9 g. AcCH_2Br in 10 ml. PhMe heated for 10 min. at 100° , gave 3.2 g. 1-acetonyl-2,3-dimethylbenzimidazolium bromide (I, $R = R_1 = \text{H}$, $R_2 = \text{Me}$) (III), m. 234° . Similarly, 7 g. 1-methyl-2-ethylbenzimidazole, m. 62° , and 8.7 g. BzCH_2Br heated for 40 min. in 25 ml. PhMe afforded 13.4 g. I ($R = \text{Me}$, $R_1 = \text{H}$, $R_2 = \text{Ph}$), m. 239° . Similarly prepd. were the following I (R , R_1 , R_2 , m.p., and % yield given): Me, H, Me, 266° , 68; H, Me, Me, 255° , 65. A mixt. of 4 g. III, 180 ml. 0.7% aq. Na_2CO_3 , and 1.6 g. Na_2SO_3 heated for 2 hrs. at $80-90^\circ$ gave 1.2 g. 2,4-dimethylpyrrolo[1,2-a]-benzimidazole (II, $R = R_1 = \text{H}$, $R_2 = \text{Me}$) (IV), m. 90° . A soln. of 3 g. crude IV in 6 ml. hot 1:1 HCl was treated with 2.5 ml. 42% HClO_4 to give 4.3 g. IV. HClO_4 , m. $199-200^\circ$. The following II were reported (R , R_1 , R_2 , m.p., and % yield given): H, H, Ph, 114° (hydrochloride m. 273° , hydriodide m. 276°), -; Me, Me, H, 99° [picrate m. 164° , perchlorate (V) m. 212°], 50; Me, Ac, Me, 199° , -; H, Me, Ph, $145-6^\circ$, (picrate m. 185° , hydriodide m. 245° , perchlorate m. 208°), 85; H, Me, Me, 96° , [perchlorate m. 178°] (VI), 24; Me, Me, Ac, 131° , -; Me, H, Ph, 36° , 66. A soln. of 0.2 g. VI and 0.1 g. p- $\text{Me}_2\text{NC}_6\text{H}_4\text{CHO}$ in 2 ml. Ac_2O refluxed for 10 min. gave 0.12 g. VII, m. 236° . Similarly prepd. in 69% yield was VIII, m. 232° . A soln. of 0.3 g. VI and 0.3 g. HC(OEt)_3 in 2 ml. pyridine refluxed for 15 min. gave 0.04 g. IX, n = 0, m. 210° . V (0.3 g.) and 0.3 g. $\text{Me}_2\text{NCH(OEt)}_2$ heated for 10

min. in 2 ml. HCONMe₂ gave 0.15 g. X, n = 0, m. 290°. A soln. of 0.3 g. VI and 0.3 g. EtOCH:CHCH(OEt)₂ with 4 drops NEt₃ in 2 ml. HCONMe₂ refluxed 10 min., and kept 12 hrs., gave 0.14 g. IX, n = 1, m. 245°. Similarly V yielded 63% X, n = 1, m. >350°.

IT 20119-17-9P

RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)

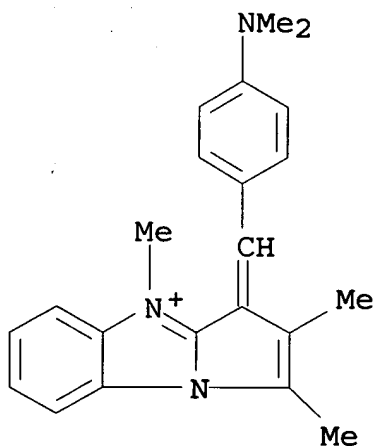
RN 20119-17-9 HCAPLUS

CN 3H-Pyrrolo[1,2-a]benzimidazolium, 3-[p-(dimethylamino)benzylidene]-
1,2,4-trimethyl-, perchlorate (8CI) (CA INDEX NAME)

CM 1

CRN 47434-10-6

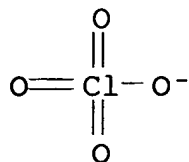
CMF C22 H24 N3



CM 2

CRN 14797-73-0

CMF Cl O4



CC 40 (Dyes, Fluorescent Brightening Agents, and Photosensitizers)
 IT 15776-73-5P 15776-74-6P 15776-75-7P 15776-76-8P 15776-77-9P
 15897-57-1P 20118-97-2P 20118-98-3P 20118-99-4P 20119-00-0P
 20119-02-2P 20119-04-4P 20119-05-5P 20119-07-7P 20119-08-8P
 20119-09-9P 20119-10-2P 20119-11-3P 20119-12-4P 20119-14-6P
 20119-15-7P 20119-17-9P 20119-18-0P 20119-19-1P
 20119-20-4P 20119-21-5P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (prepn. of)

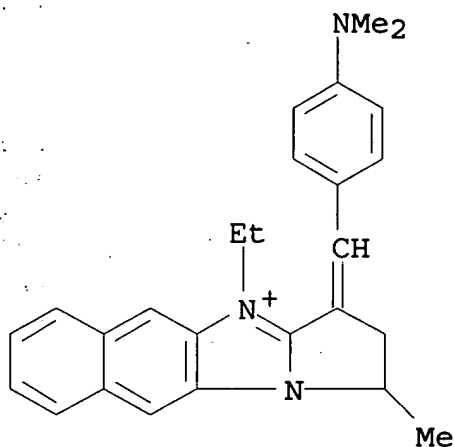
L39 ANSWER 19 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1967:96228 HCAPLUS
 DOCUMENT NUMBER: 66:96228
 TITLE: Merocyanine and styryl photographic sensitizers
 INVENTOR(S): Lincoln, Lewis L.; Brooker, Leslie G. S.
 PATENT ASSIGNEE(S): Eastman Kodak Co.
 SOURCE: Brit., 14 pp.
 CODEN: BRXXAA
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 1054107		19670104	GB	
US 3397981		19680820	US 1966-532100	
				196603 07
PRIORITY APPLN. INFO.:			US	196209 27

GI For diagram(s), see printed CA Issue.
 AB Merocyanimines of general formula I and styryl derivs. of general
 formula II are prepd. as sensitizers for photographic Ag halide

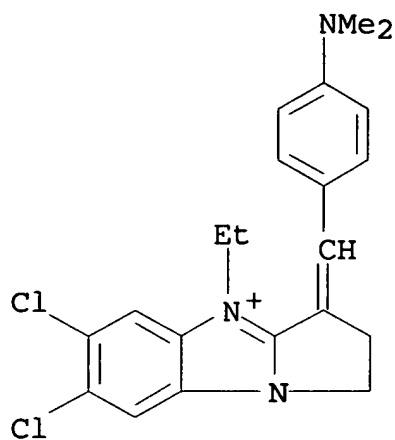
emulsions. In formula I and II, Z is benzo or naphtho, R is a substituted or unsubstituted alkyl group, R' is H or Me, X = S or CON(Et). Thus, 31.6 g. 1,2-C₁₀H₆(NH₂)₂ and 17.2 g. γ -butyrolactone were stirred for 7 hrs. at 270-90° with distn. of 7 cc. H₂O. Vacuum distn. of the glassy residue gave a yellow mass b1.5 145-65°, which was solidified by stirring with excess Et₂O, filtered, stirred into Me₂CO, filtered, and washed with Me₂CO to give 15 g. yellow 1,2-trimethylnaphth[1,2-d]imidazole (III), m. 121-2°. A mixt. of 1 mole III and 1.1 moles p-MeC₆H₄SO₃Et (QEt) heated for 26 hrs. at 115°, cooled, and the glassy mass refluxed with excess Me₂CO gave 98% pink IV (Z = 1,2-naphtho, R = Et, R' = H, n = 1, Y = Q), m. 181-2° (decompn.). Similarly, other IV were prep'd. (Z, R, R', n, Y, % yield, appearance, and m.p. given): 2,3-naphtho, Et, H, 2, Q, 94, light tan, 201-2° (decompn.); benzo, Et, H, 1, Q, 92, white, 133-4°; 2,3-naphtho, Et, H, 1, Q, 44, -, 172-3° (EtOH) (V); 2,3-naphtho, CH₂CH₂CHMeSO₃-, H, 1, -, 96, -, >310°; 5,6-dichlorobenzo, Et, H, 1, iodide, 43, gray, 282-3° (decompn.); 2,3-naphtho, Et, Me, 1, iodide, 81, white, 276-7° (decompn.) (unquaternized: yellow oil, b2 180°). Et₃N (1.4 cc.) was added to a boiling mixt. of 1.82 g. V (iodide salt), 1.63 g. 5-(acetanilidomethylene)-3-ethylrhodanine, 20 cc. dry C₆H₅N, the mixt. boiled for 30 min., cooled and filtered to give 0.15 g. (11%) I (Z = 2,3-naphtho, R = Et, R' = H, n = 1, m = 0, X = S), m. 308-9° (C₅H₅N), sensitivity max. in AgBr-AgI emulsions 570 m μ , sensitizes to 620 m μ . Similarly are prep'd. the following I (Z, R, R', n, m, X, % yield, m.p., sensitivity max. and sensitization limit in m μ in AgBr-AgI emulsions given): 1,2-naphtho, Et, H, 1, 0, S, 5, 299-300° (decompn.) (C₅H₅N), 550, 610; benzo, Et, H, 1, 0, S, 25, 277-8° (decompn.) (C₅H₅N and MeOH), 550, 610; 2,3-naphtho, Et, H, 2, 0, S, 33, 259-60° (decompn.) (MeOH), 585, 625 (580 and 480-625 m μ in AgCl-AgBr emulsions); 5,6-dichlorobenzo, Et, H, 1, 0, S, 20, 311-12° (decompn.) (C₅H₅N and MeOH), 575, 620; 5,6-dichlorobenzo, Et, H, 1, 0, CON(Et), 20, >320° (C₅H₅N and MeOH), 505, 540; 2,3-naphtho, Et, Me, 1, 0, S, 11, 295-6° (decompn.) (C₅H₅N and MeOH), 580, 640. A mixt. of 2.04 g. V, 1.49 g. p-Me₂NC₆H₄CHO, 15 cc. abs. EtOH and 1 drop piperidine boiled under reflux for 2 hrs., cooled, filtered, and the cake washed with Me₂CO gave 0.55 g. (20%) II (Z = 2,3-naphtho, R' = H), m. 298-9° (decompn.) (MeOH), 535 m μ and 555 m μ . Similarly, other II were prep'd. (Z, R, Y, % yield, m.p., and sensitization max. and sensitivity limit in m μ given): benzo, H, Q, 15, 250-1° (decompn.) (MeOH), 480, 530; 5,6-dichlorobenzo, H, iodide, 20, 316-17° (decompn.) (MeOH), indefinite, 560; 2,3-naphtho, Me, iodide, 36,

320-1° (decompn.) (MeOH), 530, 590.
IT 14318-06-0P 14318-07-1P 15023-15-1P
15026-10-5P
RL: IMF (Industrial manufacture); PREP (Preparation)
(prepn. of)
RN 14318-06-0 HCAPLUS
CN 1H-Naphtho[2,3-d]pyrrolo[1,2-a]imidazolium, 3-[p-
(dimethylamino)benzylidene]-4-ethyl-2,3-dihydro-1-methyl-, iodide
(8CI) (CA INDEX NAME)



● I⁻

RN 14318-07-1 HCAPLUS
CN 1H-Pyrrolo[1,2-a]benzimidazolium, 6,7-dichloro-3-[p-
(dimethylamino)benzylidene]-4-ethyl-2,3-dihydro-, iodide (8CI) (CA
INDEX NAME)



● I⁻

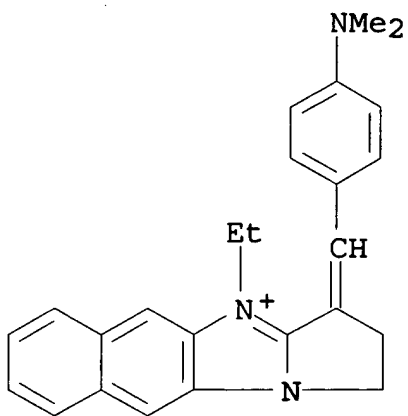
RN 15023-15-1 HCAPLUS

CN 1H-Naphtho[2,3-d]pyrrolo[1,2-a]imidazolium, 3-[p-(dimethylamino)benzylidene]-4-ethyl-2,3-dihydro-, p-toluenesulfonate (8CI) (CA INDEX NAME)

CM 1

CRN 47573-92-2

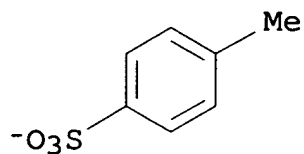
CMF C25 H26 N3



CM 2

CRN 16722-51-3

CMF C7 H7 O3 S



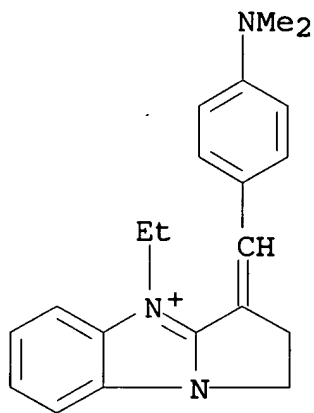
RN 15026-10-5 HCAPLUS

CN 1H-Pyrrolo[1,2-a]benzimidazolium, 3-[p-(dimethylamino)benzylidene]-4-ethyl-2,3-dihydro-, p-toluenesulfonate (8CI) (CA INDEX NAME)

CM 1

CRN 47336-15-2

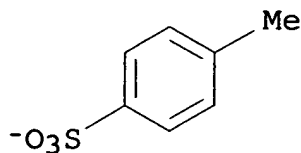
CMF C21 H24 N3



CM 2

CRN 16722-51-3

CMF C7 H7 O3 S



IC C09B
 CC 40 (Dyes, Fluorescent Brightening Agents, and Photosensitizers)
 IT 14318-06-0P 14318-07-1P 14318-08-2P
 14318-09-3P 14318-10-6P 14318-11-7P 14318-27-5P 14690-49-4P
 14690-50-7P 14690-51-8P 14706-72-0P 14839-18-0P 14975-11-2P
 14975-12-3P 15023-15-1P 15023-16-2P 15023-17-3P
 15023-18-4P 15023-23-1P 15026-10-5P
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (prepn. of)

L39 ANSWER 20 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1965:420723 HCAPLUS
 DOCUMENT NUMBER: 63:20723
 ORIGINAL REFERENCE NO.: 63:3671g-h,3672f
 TITLE: Color and constitution. XIII. Merocyanines as
 solvent property indicators
 AUTHOR(S): Brooker, Leslie G. S.; Craig, Arnold C.;
 Heseltine, Donald W.; Jenkins, Philip W.;
 Lincoln, Lewis L.
 CORPORATE SOURCE: Eastman Kodak Co., Rochester, NY
 SOURCE: Journal of the American Chemical Society (1965),
 87(11), 2443-50
 CODEN: JACSAT; ISSN: 0002-7863
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB cf. CA 46, 1898e. The suggestion made in 1951 that certain highly polar merocyanine dyes be used as solvent property indicators is reaffirmed. Merocyanines of this kind, which show blue shifts, are of limited usefulness in solvents of low polarity because of insoly., a disadvantage shared by indicators suggested more recently by Kosower (CA 53, 2778h) and by Dimroth (D., et al., CA 59, 7681g). Certain weakly polar merocyanines, which show red shifts, are readily sol. in solvents of low polarity such as hydrocarbons, and prove to be sensitive indicators for this type of solvent. The transition energies in kcal./mole of dyes IV and VII, which are blue- and red-shifting, resp., are designated χ_B and χ_R , resp., and used as criteria of gross solvent property. The solvent sequence given by χ_R values differs significantly from that

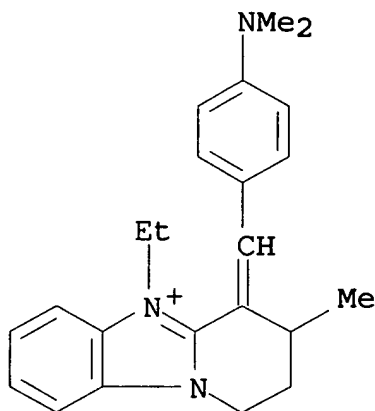
given by values of χ_B . Whereas χ_B values correlate excellently with data of K. (loc. cit.), D. (loc. cit.), and Winstein (cf. Smith, et al., CA 55, 24205g), χ_R values do not.

IT 2913-17-9, Pyrido[1,2-a]benzimidazolium, 4-[[4-(dimethylamino)phenyl]methylene]-5-ethyl-1,2,3,4-tetrahydro-3-methyl-, perchlorate
(as solvent property indicator)
RN 2913-17-9 HCAPLUS
CN Pyrido[1,2-a]benzimidazolium, 4-[[4-(dimethylamino)phenyl]methylene]-5-ethyl-1,2,3,4-tetrahydro-3-methyl-, perchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 47480-23-9

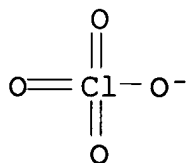
CMF C23 H28 N3



CM 2

CRN 14797-73-0

CMF Cl O4



CC 6 (Phase Equilibriums, Chemical Equilibriums, and Solutions)
IT 2913-15-7, 1,3-Cyclobutanedione, 4-[p-(dimethylamino)benzylidene]-
2,2-dimethyl- 2913-17-9, Pyrido[1,2-a]benzimidazolium,
4-[[4-(dimethylamino)phenyl]methylene]-5-ethyl-1,2,3,4-tetrahydro-3-
methyl-, perchlorate 2913-18-0, Acetanilide, N-[5-(3,3-dimethyl-
2,4-dioxocyclobutylidene)-1,3-pentadienyl]- 2913-19-1, Barbituric
acid, 1,3-diethyl-2-thio-5-(3,5,5-trimethyl-2-cyclohexen-1-ylidene)-
2913-20-4, 2-Isoxazolin-5-one, 4-[3-[p-(diethylamino)styryl]-5,5-
dimethyl-2-cyclohexen-1-ylidene]-3-phenyl- 2913-21-5,
2-Isoxazolin-5-one, 3-phenyl-4-(3,5,5-trimethyl-2-cyclohexen-1-
ylidene)- 2913-22-6, Barbituric acid, 5-[5,5-dimethyl-3-[2-
(2,3,6,7-tetrahydro-1H,5H-benzo[ij]quinolizin-9-yl)vinyl]-2-
cyclohexen-1-ylidene]-1,3-diethyl-2-thio- 3210-94-4,
Benzimidazolium, 3-ethyl-2-[7-(1-ethyl-2-benzimidazolinyldiene)-
2,3,5,6-tetramethyl-1,3,5-heptatrienyl]-, perchlorate 3210-95-5,
1,3-Cyclobutanedione, 4-[5-(5-ethyl-1,2,3,5-tetrahydro-3-
methylpyrido[1,2-a]benzimidazol-4-yl)-2,4-pentadienylidene]-2,2-
dimethyl- 3210-96-6, 1,3-Cyclobutanedione, 2,2-dimethyl-4-[6-(1-
methyl-4(1H)-pyridylidene)-2,4-hexadienylidene]- 3210-96-6,
Pyridine, 4-[6-(3,3-dimethyl-2,4-dioxo-1-cyclobutylidene)-2,4-
hexadienylidene]-1,4-dihydro-1-methyl- 856303-63-4,
1H,5H-Benzo[ij]quinolizine, 9-[2-[3-(1,3-diethyltetrahydro-4,6-dioxo-
2-thioxo-5(2H)pyrimidinylidene)-5,5-dimethyl-2-cyclohexen-1-
yl]vinyl]-2,3,6,7-tetrahydro- 859804-92-5, Pyrido[1,2-
a]benzimidazole, 4-[5-(3,3-dimethyl-2,4-dioxocyclobutylidene)-1,3-
pentadienyl]-5-ethyl-1,2,3,4-tetrahydro-3-methyl-
(as solvent property indicator)

L39 ANSWER 21 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1963:82272 HCAPLUS

DOCUMENT NUMBER: 58:82272

ORIGINAL REFERENCE NO.: 58:14164f-h,14165a-h,14166a-h,14167a-h,14168a-
h,14169a-h

TITLE: Methine dyes

PATENT ASSIGNEE(S): Gevaert Photo-Producten N.V.

SOURCE: 129 pp.

DOCUMENT TYPE: Patent

LANGUAGE: Unavailable

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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BE 618235		19620917	BE	

GB 1001061
US 3243298

19660329

GB
US 1962-197925

196205
28

PRIORITY APPLN. INFO.:

GB

196105
29

GI For diagram(s), see printed CA Issue.

AB New sym. and unsym. methine dyes for sensitizing photographic Ag halide emulsions are described. The new dyes are formed when benzimidazole derivs. of the general formulas I and II, where the aromatic nucleus may be substituted by Br, Cl, F, CO₂Et, CO₂H, AcNH, and CN, or by a sequence of atoms necessary to complete another aromatic ring, and where X = CH₂, CH₂CH₂, or O, are quaternized with MeI, EtI, HOCH₂CH₂Br (III), AcNHSO₂(CH₂)₄Br (IV), MeSO₂NHCOCH₂Br (V), HO₂C(CH₂)₂Br (VI), or 1,3-propanediol sulfate (VII) and subsequently condensed with 2-(2-acetanilidovinyl)-3-ethyl-thiazolinium bromide (VIII), the 2-(2-anilinovinyl) analog (IX) of VIII, the selenazolium iodide analog (X) of VIII, 2-(2-phenyliminoethylidene)-3-ethyl-2,3-dihydrobenzoxazole (XI), the 5-Me deriv. (XII) of XI, the 5-Ph deriv. (XIII) of XI, 1,3-diethyl-2-[2-(p-toluenesulfonylanilino)vinyl]-5,6-dichlorobenzimidazolium chloride (XIV), 3-ethyl-5-(2-acetanilidovinylmethylene)-2-thio-2,2,4-thiazolidinedione (XV), or the 5-(3-acetanilidopropenylidene) analog (XVI) of XV to yield unsym. methine dyes, or subsequently condensed with HC(OEt)₃ or EtOCH:CHCH(OEt)₂ (XVII) to yield sym. methine dyes. 2,5-Cl₂C₆H₃NO₂ (96 g.) added at 50° to 71 g. pyrrolidine (XVIII), kept 15 min. at 50°, dild. with H₂O, and filtered gave 102 g. N-(2-nitro-4-chlorophenyl)pyrrolidine (XIX), m. 73° (iso-PrOH). 2,5-F₂C₆H₃NO₂ (76.4 g.) added at 90° to 89 cc. XVIII, poured into H₂O, and extd. with C₆H₆ yielded the 4-fluoro analog of XIX, m. 48° (iso-PrOH). XVIII (15.6 g.) added dropwise to 23 g. 4,3-Cl(O₂N)C₆H₃CO₂Et in 60 cc. refluxing abs. EtOH, refluxed 1 hr., poured into H₂O, and filtered yielded the 4-CO₂Et analog of XIX, m. 78°. 2,4,5-Cl(O₂N)₂C₆H₂CO₂H (143 g.) and 140 cc. SOCl₂ heated 3 hrs. on the water bath and evapd., and the residue treated slowly with 220 cc. EtOH, poured into 2 l. H₂O, and filtered yielded 2,4,5-Cl(O₂N)₂C₆H₂CO₂Et (XX), m. 78° (EtOH). XX (55 g.) in 250 cc. MeOH added dropwise to 28.4 g. XVIII, heated 10 min. on the water bath, and filtered gave the N-[5,4,2-Cl(EtO₂C)(O₂N)C₆H₂] deriv. of XVIII, m. 105°. 4,3-Cl(O₂N)C₆H₃SO₂Cl (102.4 g.) added dropwise at 50° to 148 cc. XVIII, heated 15 min. on the water bath, poured into H₂O, and

filtered yielded 2-pyrrolidino-5-(pyrrolidinosulfonyl)-1-nitrobenzene, m. 133° (iso-PrOH). 2,5-Br(F)C₆H₃NO₂ (115 g.) and 109 cc. piperidine (XXI) heated 1.5 hrs. with stirring at 95°, dild. with H₂O, and filtered gave the 2,4-F(O₂N)C₆H₃ deriv. of XXI, m. 53° (iso-PrOH). 1-[4,2-Cl(H₂N)C₆H₃] deriv. (82.4 g.) of XVIII (obtained by hydrogenation of XIX) in 625 cc. 2N HCl diazotized with 29.4 g. NaNO₂ in 70 cc. H₂O, poured into 35.3 g. NaN₃ in 168 g. NaOAc in 650 cc. H₂O, and filtered, the residue dissolved in 500 cc. PhNO₂, added dropwise at 170° to 500 cc. PhNO₂, concd. in vacuo to about 100 cc., cooled, and filtered yielded 6-chloro-2,3-dihydro-1H-pyrrolo[1,2-a]benzimidazole (XXII), m. 137° (C₆H₆-hexane). By the method employed for the prepn. of XIX were prepd. the following N-aryl-substituted derivs. (XXIII) of XVIII and converted further by the method described for the prepn. of XXII to the following substituted derivs. of 2,3-dihydro-1H-pyrrolo[1,2-a]benzimidazole (XXIV) [N-aryl substituent of the XXIII used, m.p. or b.p./mm. of the XXIII, substituent(s) of the resulting deriv. of XXIV, and its m.p. given]: 6,2-Cl(O₂N)C₆H₃, 134-6°/3, 8-Cl (XXV), 122°; 4,5,2-Cl₂(O₂N)C₆H₂, 80°, 6,7-di-Cl (XXVI), 215°; 4,2-F(O₂N)C₆H₃, 48°, 6-F (XXVII), 128°; 4,2-Br(O₂N)C₆H₃, 76°, 6-Br (XXVIII), 150°; 4,2-EtO₂C(O₂N)C₆H₃, 78°, 6-CO₂Et, 134°; 6,2-EtO₂C(O₂N)C₆H₃, 53°, 8-CO₂Et, 96°; 5,4,2-Cl(EtO₂C)(O₂N)C₆H₃, 105° (2-NH₂ analog, m. 90°), 6-carbethoxy-7-chloro (XXIX), 138°; 4-pyrrolidinosulfonyl-2-nitrophenyl, 133° (2-NH₂ analog, m. 174°), 6-pyrrolidinosulfonyl (XXX), 239°; 4,2-Me(O₂N)C₆H₃, 60°, 6-Me (XXXI), 146°; 5,4,2-Br(EtO₂C)(O₂N)C₆H₂, 105° (2-NH₂ analog, m. 95°), 6-carbethoxy-7-bromo (XXXIA), 114°. By the same methods were prepd. the following substituted derivs. of 1,2,3,4-tetrahydropyrido[1,2-a]benzimidazole (XXXII) via the corresponding N-aryl-substituted derivs. (XXXIII) of XXI [N-aryl substituent of the XXXIII used, m.p. of the XXXIII, substituent(s) of the resulting XXXII, and m.p. of the XXXII given]: 4,2-Cl(O₂N)C₆H₃, --, 7-Cl (XXXIV), 151-3°; 4,2-F(O₂N)C₆H₃, 53°, 7-F (XXXV), 110°; 4,5,2-Cl₂(O₂N)C₆H₃, --, 7,8-di-Cl (XXXVI), 184°; 4,2-Br(O₂N)C₆H₃, --, 7-Br (XXXVII), 163°; 4,2-NC(O₂N)C₆H₃, 112°, 7-CN (XXXVIII), 176°; 4-piperidinosulfonyl-2-nitrophenyl, 106° (2-NH₂ analog, m. 139°), 7-piperidinosulfonyl (XXXIX), 229°; 4,2-F₃C(O₂N)C₆H₃, 55 (2-NH₂ analog, m. 52°), 7-CF₃ (XL), 140-1°; 5,2-Cl(O₂N)C₆H₃, --, 8-Cl (XLI), --. By the method of Saunders (CA 50, 7797c) were prepd. the following substituted 3,4-dihydro-1H-[1,4]oxazino[4,3-a]benzimidazoles (XLII) from

3,4-dihydro-1H-1,4-oxazine via the appropriate N-aryl-substituted derivs. (XLIII) of XLII [N-aryl substituent of XLIII, m.p. of XLIII, substituent(s) of XLII, and m.p. of XLII given]: 4,2-Cl-(O₂N)C₆H₃, --, 8-Cl (XLIV), --; 4,2-NC(O₂N)C₆H₃, 130° (2-NH₂ analog, m. 177°), 8-CN (XLV), 186°; 4,5,2-Cl₂(O₂N)C₆H₂, 75° (2-NH analog, m. 146°), 7,8-di-Cl (XLVI), 192°. XXVIII (19.1 g.) in 60 cc. concd. H₂SO₄ treated at 0-5° with 7.7 cc. HNO₃ (d. 1.42) in 25 cc. concd. H₂SO₄, poured into H₂O, basified with NH₄OH, and filtered gave the 6-bromo-7-nitro (XLVII) deriv. of XXIV, m. 201° (EtOH). XLVII (15.2 g.) in MeOCH₂CH₂OH hydrogenated over Raney Ni yielded the 7-NH₂ analog (XLVIII) of XLVII, m. 264° (EtOH). XLVIII (9.2 g.) in 30 cc. H₂O and 9 cc. HCl diazotized with 2.5 g. NaNO₂ in 15 cc. H₂O, neutralized with Na₂CO₃, treated with stirring with 6.89 g. CuCN and 12.3 g. KCN in 100 cc. H₂O, kept 0.5 hr. at room temp. and 15 min. at 50-60°, cooled, and filtered, and the residue sublimed at 200°/2 mm. yielded 6-bromo-7-cyano deriv. (XLIX) of XXIV, m. 224° (C₆H₆-hexane). 7-NH₂ deriv. (L) (17.3 g.) of XXIV in 200 cc. 5N HCl diazotized with 7.2 g. NaNO₂ in 30 cc. H₂O, treated with 8 g. CuCl in 35 cc. concd. HCl at 50-60°, cooled, and filtered, and the residue in H₂O treated with 25% NH₄OH yielded the 7-Cl deriv. (LI) of XXIV, m. 136° (C₆H₆). L (43.6 g.) in 31% aq. HBF₄ diazotized with 18.5 g. NaNO₂ in 50 cc. H₂O, and neutralized with cooling with Na₂CO₃ yielded the diazonium fluoroborate analog (LII) of L, m. 170-80° (decompn.). LII added to refluxing 250 cc. Tetralin until the BF₃ evolution ceased and evapd., the residue extd. with warm 2N HCl, the ext. basified with Na₂CO₃ and extd. with CHCl₃, and the CHCl₃ ext. distd. gave the 7-F deriv. (LIII) of XXIV, m. 124°, b₃ 166°. Similarly were prepd. by these methods the following substituted derivs. of XXIV from the corresponding 7-NO₂ (LIV) via the 7-NH₂ derivs. (LV) [substituent of LIV and LV, m. ps. of LIV and LV, and substituent(s) and m.p. of the resulting deriv. of XXIV given]: 6-Cl, 203°, 264°, 6-chloro-7-cyano (LVI), 215°; 6-F, 236°, 230°, 6-fluoro-7-cyano (LVII), 210°; none, --, --, 7-CN (LVIII), 155°. In the same manner were prepd. the following substituted XXXII [substituent and m.ps. of the 7-NO₂ and 7-NH₂ analogs of the resulting XXXII, and substituent(s) and m.p. of the XXXII given]: 6-Br, 184°, 217°, 7-bromo-8-cyano (LVIIIA), 210°; 6-Cl, 194°, 210°, 7-chloro-8-cyano (LIX), 212°; 6-F, 264°, 199°, 7-fluoro-8-cyano (LX), 253°; none, --, --, 8-CN (LXI), 194°. In the same manner was prepd. 7-cyano-8-chloro-3,4-dihydro-1H-[1,4]oxazino[4,3-a]benzimidazole (LXII), m. 300°, from the 7-NO₂ analog, m. 220°, via

the 7-NH₂ analog, m. 264°. 6-CO₂Et deriv. (LXIII) (5 g.) of XXIV in 15 cc. EtOH and 25 cc. 2.5N NaOH refluxed 5 min., cooled, acidified with AcOH, and filtered yielded the 6-CO₂H deriv. (LXIV) of XXIV, m. 300°. Similarly were obtained the following derivs. of XXIV [substituent(s) and m.p. given]: 8-CO₂H (LXIVA) 310-12°, 6-carboxy-7-chloro (LXV), >270°. L (8.65 g.) in 50 cc. C₆H₆ treated dropwise with Ac₂O, refluxed 15 min., cooled, and filtered yielded 7.3 g. 7-AcNH deriv. (LXVI) of XXIV, m. 260-2° (EtOH). CuCl (18.6 g.) added to 40.3 g. 6-Br deriv. of XXIV in 200 cc. PhNO₂, refluxed 1.5 hrs., cooled to 100°, treated with shaking with 34 g. NaCN in 100 cc. H₂O, and dild. with 40 cc. H₂O and 40 cc. CHCl₃, and the org. phase worked up yielded 6-CN deriv. of XXIV, m. 190° (EtOH). 3,6-Dihydro-4,5-benzo-2-pyrone (24.8 g.) and 18.1 g. o-C₆H₄(NH₂)₂ heated 15 hrs. at 250° under pressure and distd. yielded 6,11-dihydrobenzimidazolo[1,2-b]isoquinoline (LXVII), m. 202° (EtOAc). XXIV (6.3 g.) and 5.7 g. MeI in 15 cc. Me₂CO refluxed 0.5 hr., cooled, and filtered gave XXIV.MeI, m. 220°. XXIV (16 g.) and 23.5 g. EtI heated 15 hrs. at 110° under pressure gave XXIV.EtI, m. 198°. XXX (3.4 g.) and 1.2 cc. MeI heated 16 hrs. under pressure at 95° gave XXX.MeI, m. >270°. XXXIV (6.2 g.) and 6.2 g. EtI heated 1.5 hrs. at 110° yielded XXXIV.EtI, m. >250°. XLIV (10.4 g.) and 10 g. EtI heated 16 hrs. at 110° yielded XLIV EtI, m. 186°. 8-Aminopyrido[1,2-a]benzimidazole (LXVIII) (8.8 g.) in 80 cc. 5N HCl diazotized with 3.7 g. NaNO₂ in 10 cc. H₂O, poured into a CuCl soln., filtered, basified with NH₄OH, and filtered yielded the 8-Cl analog (LXIX) of LXVIII, m. 207°. LXIX (2 g.) and 1.7 g. EtI heated 15 hrs. at 110° gave LXIX.EtI, m. >250°. LXIX.EtI (3 g.) in MeOCH₂CH₂OH hydrogenated at 80° over Raney Ni gave XLI.EtI, m. 250°. L (8.6 g.) in 50 cc. MeOH treated dropwise with 4 cc. MeI and refluxed 15 min. gave L.MeI, m. 282°. 4-Hydroxy-6-cyano deriv. (4 g.) of XXIV in 40 cc. Ac₂O refluxed 10 min. and dild. with Et₂O pptd. the 4-acetoxy-6-cyano deriv. of XXIV, m. 208°. The following quaternary salts were prepd. in Me₂CO (except where another solvent is indicated in parentheses) (starting tertiary base and alkyl halide used, reaction time in hrs., reaction temp., and m.p. of the resulting quaternary ammonium salt given): XXIV, III, 6, 105°, 180°; 2,3-dihydro-1H-pyrrolo [1,2-a]naphtho[2,3-d]imidazole (LXIXA), EtI, 24, 110°, 250; XXII, EtI, 15, 110°, 242°; XXV, EtI, 3.5, 105-10°, 238°; XXVI, EtI, 16, 110°, >250°; XXVI, III, 4, 110°, >250°; XXVI, IV, 4, 140°, 252°; XXVI, V, 4, 140°, >260°; XXVII, EtI, 16, 110°, 237°; XXVIII, EtI, 15,

110°, 250°; LXIII, MeI, 3, 90°, 238°;
8-CO₂Et deriv. (LXX) of XXIV, MeI, 3.5, 90°, 190°;
XXIX, MeI, 2, 95°, 250°; XXIX, VI, 3, 125°,
192°; XXIX, VII, 2, 120°, 140-5°; XXIX, IV, 4
(in MeNO₂), 120°, --; XXIX, V, 2, 120°, 120-5°;
XXX, MeI, 6, 95°, >270°; XXX, EtI, 16, 105°,
220°; XXXI, EtI, 8 (in MeNO₂), 100°, 202°;
XXXIA, III, 2, --; XXXIA, VII, 2, 120°, --; XXXIA, IV, 2,
120°, 100°; XXXIA, V, 1, 120°, >250°; L,
MeI, 0.25, -- (at reflux) (in MeOH), 282°; XLIX, EtI, 16,
110°, > 250°; LVI, EtI, 16, 110°, >250°;
LVII, EtI, 16, 110°, 280°; LVIII, III, 3, 105°,
246°; LI, EtI, 5.5, 110°, 238°; LIII, EtI, 15,
110°, 210°; LXIV, MeI, 15, 100°, 304°;
LXIVA, MeI, 16, 125°, 265°; LXV, MeI, 17, 125°,
270-2°; LXVI, EtI, 16, 110°, 230°; 6-CN deriv.
(LXXI) of XXIV, EtI, 16, 105°, >250°; LXXI, III, 15
(in MeNO₂), 125°, 207-9°; LXXI, V, 3 (in MeNO₂),
125°, 200°; XXXII, MeI, 0.5, -- (at reflux),
210°; XXXII, EtI, 15, 110°, 246°; XXXII, VII,
3, -- (at reflux), 260°; XXXII, AcNHSO₂(CH₂)₃. Br, 3, -- (at
reflux), >260°; XXXII, IV, 4, -- (at reflux), 206-8°;
XXXII, V, 5, -- (at reflux), 238°; XXXIV, EtI, 15,
110°, >250°; XXXIV, III, 16, 120°, 228°;
XXXIV, VII, 2, 120°, >260°; XXXV, EtI, 15,
110°, >250°; XXXVI, III, 4, 110°, >250°;
XXXVI, V, 3, -- (at reflux), >260°; XXXVII, EtI, 15,
110°, >250°; XXXVIII, EtI, 15, 100°,
306°; XXXIX, EtI, 15, 110°, >250°; XL, EtI, 3
(in MeNO₂), 100°, 260°; XL, MeI, 1.5, -- (at reflux),
270°; XLI, EtI, 15, 110°, 250°; LVIIIA, EtI,
16, 110°, >300°; LIX, EtI, 15, 110°,
>250°; LX, EtI, 15, 110°, >250°; LXI, EtI, 15,
110°, >260°; LXVII, MeI, 4, 95, 260°;
1,2,3,4,8,9,10,11-octa-hydrodipyrido[1,2-a:1',2'-a']benzo[1,2-d:5,4-
d']diimidazole (LXXII), 2EtI, 16, 110°, >260°; XLIV,
EtI, 16, 110°, 186°; XLV, EtI, 15, 100,
200-10°; XLVI, 16, 110°, 202-5°; LXII, MeI, 4,
110°, 170°; LXII, EtI, 16, 110°, --. XXIV.EtI
(6.3 g.), 7 cc. XVII, and 20 cc. PhNO₂ refluxed 5 min., cooled, and
filtered gave LXXIII (R, R' = Et, A = CHCH:CH, X = H), m.
197° (596, --, 640 AgCl); the nos. given in parentheses after
the m.p. throughout this abstr. are the absorption max. and the log
ε value of the resp. compd. and the absorption max. of an
AgCl, AgCl-AgBr, or AgBr-AgI photographic emulsion sensitized with

the compd.). XXX.MeI (4.9 g.) in 25 cc. PhNO₂ refluxed 2 hrs. with 3.5 cc. HC(OEt)₃, cooled, and filtered yielded LXXIII (R and R' = Me, A = CH, X = pyrrolidinosulfonyl), m. above 320° (530, 5.32, 575 AgCl). Similarly were prepd. by treatment with HC(OEt)₃ dyes from the following quaternary salts (m.p. and, in parentheses, absorption data of the resulting dye given): XLIV.EtI, 238° (528, --, 590 AgCl); LXIII.MeI, 260° (532, --, 575 AgCl); LXXI.III, 220-4° (537, 4.97, 590 AgCl); IX (3.1 g.) and 3.1 g. LVIII.III in 20 cc. Ac₂O treated with 2.8 cc. Et₃N, refluxed 15-min., cooled, dild. with Et₂O, and filtered and the residue treated with NaClO₄ gave LXXIV (R = Et, R' = CH₂CH₂OAc, X and X' = H, X' = CN, Z = S, An = ClO₄), m. 175° (476, 5.12, 520 AgCl-AgBr). XLIX.EtI (2.1 g.), 1.6 g. IX, and 25 cc. Ac₂O refluxed 2 hrs. with 1.4 cc. Et₃N, cooled, and filtered gave LXXIV (R and R' = Et, X = Br, X' = CN, X' = H, Z = S, An = I), m. >260°, (MeOH) (480, 5.135, 540 AgBr-AgI). Similarly were prepd. dyes from the following quaternary salts (same data given): XXIV.EtI, >250° (462, 5.03, 500 AgCl-AgBr); XLIX.EtI, 302° (474, 5.09, 520 AgCl-AgBr); XXXVIII.EtI, 270° (474, 5.034, 520 AgCl-AgBr); XXXI.EtI, >260° (472, 5.01, 525 AgCl-AgBr); LIX.EtI, >250° (480, 5.18, 540 AgCl-AgI); LX.EtI, >250° (480, 5.10, 540 AgBr-AgI); XLIV.EtI, 240° (483, 4.95, 520 AgCl-AgBr); XLV.EtI, >250° (500, 5.058, 540 AgCl); XXIV.EtI, >250° (454, 4.95, 490 AgCl-AgBr); LI.EtI, >250° (465, 5.03, 510 AgCl); XXV.EtI, 291-2° (462, 4.962, 515 AgCl); XXVI.EtI, >260° (468, 5.206, 519 AgCl); XXXII.EtI, >260° (458, 4.991, 500 AgCl-AgBr); LXIII.EtI, >260° (466, 5.088, 520 AgCl-AgBr); LI.MeI, >270° (468, 5.030, 505 AgCl); LXIVA.MeI, >270° (470, 5.006, 500 AgCl); XXXIX.IV, >260° (474, 5.025, 520 AgCl-AgBr); XXIX.V, >260° (480, 5.075, 520 AgCl-AgBr); XXIX.VII, >260° (477, 4.917, 520 AgCl-AgBr); XXX.MeI, <250° (468, 5.009, 510 AgCl-AgBr); LXIXA.EtI, >250° (478, 5.14, 525 AgCl-AgBr); XXVII.EtI, >250° (458, 4.95, 500 AgCl-AgBr); XXXIV.EtI, 240° (466, 4.91, 510 AgCl-AgBr); XXXVI.EtI, >260° (570, 5.241, 520 AgCl-AgBr); XXXVI.V, >260° (461, --, 515 AgCl-AgBr); XXXVII.EtI, >260° (468, 4.982, 500 AgCl-AgBr); XXXIX.EtI, >250° (472, 5.155, 520 AgCl); XXXI.EtI, >260° (458, 4.93, 490 (AgCl-AgBr); LXXI.EtI, 281° (474, 5.068, 520 AgCl-AgBr); LXV.MeI, >250° (470, 5.104, 505 AgCl); LVIII.EtI, 292° (480, 5.111, 5.15 AgCl); XXXIA.IV, >250° (474, 5.070, 520 AgCl); XXXIA.V, >260° (479, 5.006, 520 AgCl-AgBr); XXXIA.VII, >260° (479, 4.985, 520 AgCl-AgBr); XL.MeI, 256° (466, 5.014, 500 AgCl-AgBr); XL.EtI, 260° (467, 5.84, 500 AgCl-AgBr); XLIX.EtI, >260° (478,

5.13, 525 AgCl). XXV.EtI (4.35 g.) and 5.60 g. X in 30 cc. Ac2O refluxed 5 min. with 3.2 cc. Et3N and cooled gave LXXIV (R and R' = Et, X and X' = H, X'' = Cl, Z = Se, An = I), m. 285° (EtOH) (462, 5.13, 500 AgCl-AgBr).

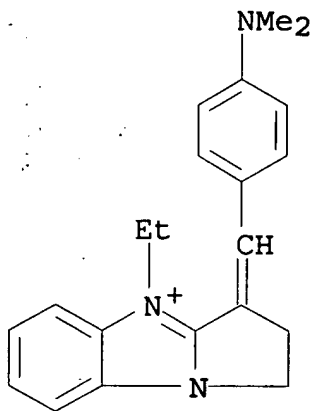
XII (2.8 g.) and 3.15 g. XXIV.EtI in 30 cc. Ac2O refluxed 45 min. with 2.8 cc. Et3N, cooled, and dild. with Et2O, and the ppt. treated with NaClO4 yielded LXXV (R and R' = Et, X = Me, X', Y, and Y' = H, Z = O, An = ClO4), m. >250° (470, 4.99, 510 AgCl-AgBr). Similarly were prepd. dyes from the following quaternary salts with the 5,6-di-Me deriv. of XI (same data given): XXIX.MeI, >310° (490, 5.22, 540 AgCl); XXX.MeI (with XII), 295° (486, 5.205, 520 AgCl-AgBr); LXIV.MeI, >270° (486, 5.194, 520 AgCl); LXIVA.MeI, >270° (492, 5.153, 535 AgCl); XLV.EtI, 302-4° (520, 5.158, 560 AgCl-AgBr); LXXI.EtI, 285° (496, 5.218, 540 AgCl-AgBr); LXV.MeI, >270° (492, 5.273, 530 AgCl). XII (5.6 g.) and 5.6 g. XXIV.III in 50 cc. Ac2O treated with stirring with 5.6 cc. Et3N, stirred 2 hrs. at room temp. and 15 min. at reflux, cooled, and dild. with Et2O, and the ppt. treated with NaClO4 yielded LXXV (R = Et, R' = CH2CH2OAc, X = Me, X', Y, and Y' = H, Z = O, An = ClO4), m. >250° (474, 5.07, 540 AgBr-AgI). LVIII.III gave similarly a dye, m. 220° (4.92, 5.12, 520 AgCl-AgBr). 5,6-Di-Me deriv. (LXXVI) (2.9 g.) of XI and 3.15 g. XXIV.EtI in 30 cc. Ac2O treated with stirring with 2.8 cc. Et3N, stirred 1 hr. at room temp. and 15 min. at reflu, and dild. with Et2O pptd. LXXV (R and R' = Et, X and X' = Me, Y and Y' = H, Z = O, An = I), m. 169° (EtOH) (476, 5.08, 510 AgCl-AgBr). Similarly were prepd. dyes from the following quaternary salts (same data given): XLIX.EtI, >260° (498, 5.281, 540 AgCl-AgBr); LXX.MeI, >270° (492, 5.125, 540 AgCl); LXIXA.EtI, >250° (498, 5.37, 545 AgCl); XXXIV.EtI (with XII), >250° (480, 5.10, 525 AgCl); XXXVI.EtI, >250° (492, 5.14, 540 AgCl); LI.EtI (with XII), >250° (478, 5.18, 520 AgCl-AgBr); XXII.EtI with XII, >250° (478, --, 520 AgCl-AgBr); XXVI.EtI, >260° (494, 5.163, 520 AgCl-AgBr); XXVII.EtI, >260° (484, 5.156, 520 AgCl-AgBr); LIII.EtI (with XII), >250° (472, 5.08, 520 AgCl-AgBr); LXIII.MeI, >270° (488, 5.207, 540 AgCl); XXV.EtI (with XII), >250° (494, 5.25, 540 AgCl); XXXV.EtI, >260° (480, 4.926, 520 AgCl-AgBr); XXXVI.EtI, >250° (492, 5.14, 545 AgCl-AgBr); XLV.EtI, >260° (506, 4.976, 520 AgCl-AgBr); LXVII.MeI, 275° (477, 4.925, 540 AgCl); LXXI.III, >260° (501, 5.184, 555 AgCl); XLVI.EtI, >260° (516, 5.157, 580 AgCl-AgBr); XXXVII.EtI (with XII), >250° (480 --, --, --). XIV (6.8 g.), 3.9 g. XXIV.EtI, 30 cc. C5H5N, and 3.5 cc. Et3N refluxed 2 hrs. and dild. with Et2O gave LXXV (R and R' = Et,

X, and X' = Cl, Y and Y' = H, Z = NEt, An = I), m. >250° (aq. MeOCH₂CH₂OH) (504, 5.20, 560 AgCl). Similarly were prepd. dyes from the following quaternary salts (same data given): XXII.EtI [with 1,3-diethyl-5-chloro analog (XIVA) of XIV], 240° (502, 5.30, 580 AgCl-AgBr); XXVII.EtI (with XIVA), >260° (500, 5.24, 535 AgCl); LIII.EtI [with 1,3-diethyl-5-cyano analog (XIVB) of XIV], >250° (500, 5.15, 540 AgCl); LVIII (with XIVB), >250° (512, 5.32, 560 AgCl); XXXIV.EtI, 200° (508, 4.91, 570 AgCl); XXXV.EtI (with XIVA), 230° (500, --, 570 AgCl); XXXIX.EtI, 286° (514, 5.41, 580 AgCl); XXXVI.III, >260° (528, 5.16, 614 AgCl); LXX.EtI (with XIVA), >260° (508, 5.16, 580 AgCl); XLIV.EtI, >260° (533, 5.29, 615 AgCl); LXXI.V (with XIVB), >250° (515, 5.331, 560 AgCl). XIV (2.5 g.), 1.5 g. LI.EtI, 10 cc. PhNO₂, and 1.2 cc. Et₃N refluxed 15 min., cooled, and dild. with Et₂O pptd. LXXV (R and R' = Et, X, X', and Y = Cl, Y' = H, Z = NEt, An = I), m. 250° (EtOH) (506, 5.24, 575 AgCl). Similarly were prepd. dyes from the following quaternary salts (same data given): XXVI.III, 260° (516, 4.85, 580 AgCl); XXVI.EtI, >260° (510, 5.481, 580 AgCl); LVIII.III, >250° (512, 5.39, 560 AgCl); LXVI.EtI, 260° (506, --, 540 AgCl); LI.EtI, >250° (504, 5.38, 570-80 AgCl); LIII.EtI [with XIVA], >250° (504, 5.22, 570 AgCl); LVIII.EtI, >250° (510, 5.35, 600 AgCl); LXIXA.EtI, >250° (517, 5.48, 595 AgCl); XXXVI.IV, >260° (516, 5.298, 590 AgCl); XXXIV.EtI (with XIVA), >250° (507, 5.15, 540-575 AgCl); XXXVI.EtI, >250° (515, 5.37, 580 AgCl); XXXVI.EtI (with XIVA), >250° (512, 5.13, 580 AgCl); XXXII.VII, >260° (515, 4.937, 580 AgCl); L.MeI, -- (--, --, 580). XL.EtI (3.8 g.), 3.3 g. benzoselenazole analog of XI, 25 cc. Ac₂O, and 1.4 cc. Et₃N heated 5 min. at 60°, cooled, and filtered gave LXXVII (R = Et, R' = Me, X, X', and Y' = H, Y = CF₃, Z = Se, An = I), m. 268° (MeOCH₂CH₂OH) (512, 5.024, 560 AgBr-AgCl). XXIX.MeI (4.06 g.) and 3.55 g. VIII in 60 cc. abs. refluxing EtOH treated dropwise with 1.4 cc Et₃N, refluxed 20 min., cooled, and filtered gave LXXV (R = Et, R' = Me, X = CO₂Et, X' = Cl, X'' = H, S = S, An = I), m. >270° (MeOH) (470, 5.145, 520 (AgCl-AgBr). Similarly were prepd. dyes from the following quaternary salts (same data given): XLVI.EtI, >260° (495, 5.048, 540 AgCl-AgBr); LXII.MeI, >260° (500, 4.793, 550 AgCl-AgBr). LXVII.MeI (3.62 g.), 3.55 g. VIII, 25 cc. HCCNMe₂, and 1.4 cc. Et₃N refluxed 5 min., cooled, filtered, dild. with Et₂O, and filtered again yielded LXXVII, m. 275° (EtOH) (456, 4.796, 520 AgCl-AgBr). XXV.EtI (4.9 g.) and 4.9 g. XI in 30 cc. Ac₂O refluxed 3 min. with 3.2 cc. Et₃N, cooled, and filtered gave LXXV (R and R' = Et, X, X', and Y = H, Y' = Cl, Z = Se, An = I), m. 290° (HCONMe₂) (506, 5.01, 555 AgBr-AgI).

XXXVI.V (4.56 g.), 3.4 g. XIII, 40 cc. HCONMe₂, and 1.4 cc. Et₃N refluxed 10 sec., treated with 5 cc. Ac₂O, refluxed 4 min., cooled, and filtered yielded LXXVII (R = Et, R' = MeSO₂N-COCH₂, X = Ph, X' = H, Y' and Y' = Cl, Z = O, no An (R' is charged), m. >260° (PhOH-EtOH) (495, 4.950, 555 AgCl-AgBr). LXVII.MeI (2.75 g.), 1.81 g. XIV, 75 cc. MeOH, and 3.4 cc. Et₂N refluxed 5 min., cooled, and filtered yielded LXXVII (R = Et, R' = Me, X and X' = Cl, Y and Y' = H, Z = NEt, An = I), m. >270° (MeOCH₂CH₂OH) (502, 4.960, 570 AgCl). LXXII.2EtI (1.73 g.), 1.9 g. IX, 20 cc. Ac₂O, and 1.7 cc. Et₃N refluxed 45 min., cooled, and dild. with Et₂O pptd. LXXIX, m. >320° (EtOH) (548, 5.30, 595 AgCl-AgBr). XXII.EtI (3.5 g.), 3.1 g. XV, 25 cc. Ac₂O, and 2.8 cc. Et₃N, cooled, and dild. with H₂O pptd. LXXX (R and R' = Et, X = Cl, Z = S, A = CH), m. 294° (MeOCH₂CH₂OH) (524, 4.95, 590 AgCl). Similarly were prepd. dyes from the following quaternary salts (same data given): XXIV.MeI, 265-7° (516-488, 4.57-4.49, 570 AgCl); XXVII.EtI, 276-8° (520, 4.98, 570 (AgCl); XXVIII.EtI, 260° (524, 5.01, 575 AgCl); XXVI.MeI, 262-3° (521, 5.02, 570 AgCl); XXXVI.EtI, 280° (528, 5.16, 585 AgCl); XXXV.EtI, 164-5° (522, --, 580 AgCl); XXXIX.EtI, 278° (528, 1.154, 580 AgCl); XLIV.EtI, 305° (548, 4.92, 600 AgCl); LXIII.MeI, >270° (536, 5.231, 590 AgCl); LXVII.MeI, 260° (518, 4.832, 570 AgCl); XLVI.EtI, >260°, (552, 4.745, 605 AgCl); XXXIV.EtI, 244° (526, 4.96, 580 AgCl). XXIV.EtI (3.14 g.), 2.9 g. XV, 25 cc. Me Carbitol, and 2.8 cc. Et₃N refluxed 20 min., cooled, and dild. with H₂O pptd. LXXX (R and R' = Et, X = H, Z = O, A = CH), m. 160° (1:1: EtOH-Me Carbitol) (498, 4.332, 550 AgCl). XXXIV.EtI gave similarly a dye, m. 192° (522; --, 575 AgCl). 2-Thio-3-ethyl-5-[4-(5-ethyl-7-chloro-1,2,3,4-tetrahydropyrido[1,2-a]benzimidazolyl)-methylene]-2,4-thiazolidinedione (1.8 g.) in 150 cc. dry C₆H₆ refluxed 4 hrs. with 0.58 cc. Me₂SO₄, cooled, and filtered, the resulting LXXXII (R = MeS) (1.7 g.), 0.6 g. 3-ethyl-2-thio-2,4-thiazolidinedione, 20 cc. C₅H₅N, and 0.5 cc. Et₃N refluxed 2-3 min., dild. with 15 cc. C₅H₅N, cooled, and filtered, and the residue recrystd. successively from C₅H₅N, HCONMe₂-PROH, and MeOCH₂CH₂OH gave LXXXIII, m. >260° (592, 5.124, 650 AgCl-Ag-Br). LXXXII (R = MeS) (0.53 g.), 0.6 g. LXXXIII, 0.31 g. 2,5-dimethyl-3-ethylbenzothiazolium methosulfate, 15 cc. C₅H₅N, and 0.14 cc. Et₃N refluxed 2.3 min., cooled, and filtered gave LXXXII (R = 5-methyl-3-ethyl-2-benzothiazolylidenemethyl), m. >260° (MeOCH₂CH₂OH) (605, 4.943, 640 AgCl-AgBr). XVI (3.32 g.) and 3.625 g. XXXIV.EtI in 70 cc. refluxing Me₂SO treated with 1.4 cc. Et₃N, heated 2 hrs. at 90°, cooled, dild. with 210 cc. H₂O, refrigerated overnight, and filtered gave LXXX (R and R' = Et, X = Cl, Z = S, A = CHCH:CH),

decomp. on heating (EtOH) (615, --, 670 (AgCl-AgBr)). LXXXII.2EtI (2.89 g.) in refluxing 80 cc. Me₂SO treated with 3.06 g. XV and 2.8 cc. Et₃N, heated 3 hrs. at 95° while being treated with an addnl. 1.4 cc. Et₃N during 2 hrs., dild. with 100 cc. MeOH, and filtered gave LXXXIV, m. >260° (PhOH-MeOH) (620, 5.460, 645 AgCl). p-Me₂NC₆H₄CHO (1.5 g.) and 3.14 g. XXIV.EtI in Ac₂O treated with 2.8 cc. Et₃N, refluxed 15 min., cooled, and filtered gave the 3-(p-dimethylaminobenzylidene) deriv. of XXIV.EtI, m. 270° (EtOH) (429, 4.13, 430-485 AgCl). XXVI.IV (4.85 g.) in 125 cc. Me Carbitol treated with 4.49 g. X and 2.8 cc. Et₃N, heated 10 min. at 100% cooled, dild. with 200 cc. Et₂O. and decanted, and the residue recrystd. from HCONMe₂ gave LXXIV (R = Et, R' = AcNHSO₂(CH₂)₄, X and X' = Cl, X'' = H, Z = Se, An = I). XXVI.V gave similarly a dye, m. >260° (477, --, 525 AgCl-AgBr). XXVI.V treated similarly with VIII yielded a dye, m. >260° (472, --, 560 AgCl-AgBr). XXVI.IV treated in the same manner with VIII gave a dye, m. >240° (470, -- 520 AgCl-AgBr).

IT 59506-69-3, 1H-Pyrrolo[1,2-a]benzimidazolium,
3-[[4-(dimethylamino)phenyl]methylene]-4-ethyl-2,3-dihydro-, iodide
(prepn. of)
RN 59506-69-3 HCAPLUS
CN 1H-Pyrrolo[1,2-a]benzimidazolium, 3-[[4-(dimethylamino)phenyl]methylene]-4-ethyl-2,3-dihydro-, iodide (9CI)
(CA INDEX NAME)



● I⁻

CC 46 (Dyes)
IT 708-21-4, 1H-Pyrrolo[1,2-a]benzimidazole, 6-fluoro-2,3-dihydro-
716-04-1, Pyrido[1,2-a]benzimidazole, 8-amino-7-fluoro-1,2,3,4-
tetrahydro- 719-70-0, Piperidine, 1-(4-fluoro-2-nitrophenyl)-
778-56-3, Pyrrolidine, 1-(4-fluoro-2-nitrophenyl)- 778-74-5,
1H-Pyrrolo[1,2-a]benzimidazole-7-carbonitrile, 6-fluoro-2,3-dihydro-
781-72-6, 1H-Pyrrolo[1,2-a]benzimidazole, 6-fluoro-2,3-dihydro-7-
nitro- 837-77-4, Pyrido[1,2-a]benzimidazole, 7-fluoro-1,2,3,4-
tetrahydro-8-nitro- 1426-99-9, Rhodanine, 3-ethyl-5-[[5-ethyl-7-
fluoro-1,2,3,5-tetrahydropyrido[1,2-a]benzimidazol-4-yl]methylene]-
1494-97-9, Pyrido[1,2-a]benzimidazole, 1,2,3,4-tetrahydro-7-
(trifluoromethyl)- 1495-08-5, Rhodanine, 3-ethyl-5-[(4-ethyl-6-
fluoro-2,4-dihydro-1H-pyrrolo[1,2-a]benzimidazol-3-yl)methylene]-
1496-40-8, Piperidine, 1-(2-amino- α,α,α -trifluoro-
p-tolyl)- 1692-79-1, Piperidine, 1-(α,α,α -
trifluoro-2-nitro-p-tolyl)- 1692-90-6, 1H-Pyrrolo[1,2-
a]benzimidazolium, 4-ethyl-6-fluoro-2,3-dihydro-, iodide
1692-91-7, 1H-Pyrrolo[1,2-a]benzimidazolium, 4-ethyl-7-fluoro-2,3-
dihydro-, iodide 1717-30-2, Pyrido[1,2-a]benzimidazole-8-
carbonitrile, 7-fluoro-1,2,3,4-tetrahydro- 1893-56-7,
1H-Pyrrolo[1,2-a]benzimidazolium, 7-cyano-4-ethyl-6-fluoro-2,3-
dihydro-, iodide 2070-89-5, 1H-Pyrrolo[1,2-a]benzimidazole,
7-fluoro-2,3-dihydro- 2248-44-4, 1H-Pyrrolo[1,2-a]benzimidazole,
7-amino-6-fluoro-2,3-dihydro- 2264-02-0, Pyrido[1,2-
a]benzimidazolium, 5-ethyl-1,2,3,4-tetrahydro-7-(trifluoromethyl)-,
iodide 2264-34-8, Pyrido[1,2-a]benzimidazole, 7-fluoro-1,2,3,4-
tetrahydro- 2730-26-9, Pyrido[1,2-a]benzimidazolium,
5-ethyl-7-fluoro-1,2,3,4-tetrahydro-, iodide 2925-72-6,
1H-Pyrrolo[1,2-a]benzimidazolium, 7-cyano-4-ethyl-3-[(3-ethyl-2-
thiazolidinylidene)ethylidene]-6-fluoro-2,3-dihydro-, iodide
10216-99-6, 1H-Pyrrolo[1,2-a]benzimidazole-7-diazonium,
2,3-dihydro-, tetrafluoroborate(1-) 10252-94-5,
1H-Pyrrolo[1,2-a]benzimidazole, 2,3-dihydro-6-methyl- 10252-95-6,
1H-Pyrrolo[1,2-a]benzimidazole, 6-chloro-2,3-dihydro- 13272-47-4,
1H-Pyrrolo[1,2-a]benzimidazole, 7-acetamido-2,3-dihydro-
14318-11-7, 1H-Pyrrolo[1,2-a]benzimidazolium, 6,7-dichloro-4-ethyl-
2,3-dihydro-, iodide 14690-50-7, Rhodanine, 3-ethyl-5-[(4-ethyl-
2,4-dihydro-1H-pyrrolo[1,2-a]benzimidazol-3-yl)methylene]-
18443-20-4, Pyrido[1,2-a]benzimidazole, 7-chloro-1,2,3,4-tetrahydro-
24351-13-1, 1H-Benzimidazolium, 5-cyano-1,3-diethyl-2-methyl-,
iodide 27429-76-1, Pyrido[1,2-a]benzimidazole-7-carbonitrile,
1,2,3,4-tetrahydro- 31897-65-1, Pyrido[1,2-a]benzimidazole,
8-chloro-1,2,3,4-tetrahydro- 31897-68-4, Pyrido[1,2-
a]benzimidazole, 7-chloro-1,2,3,4-tetrahydro-8-nitro- 32117-03-6,
Benzonitrile, 3-nitro-4-piperidino- 40779-64-4,

1H-Pyrrolo[1,2-a]benzimidazole, 6,7-dichloro-2,3-dihydro-
41173-36-8, Pyrrolidine, 1-(4-chloro-2-nitrophenyl)- 59504-25-5,
Benzoic acid, 3-nitro-4-(1-pyrrolidinyl)-, ethyl ester 59504-26-6,
Benzoic acid, 2-chloro-4,5-dinitro-, ethyl ester 59504-27-7,
Benzoic acid, 2-chloro-5-nitro-4-(1-pyrrolidinyl)-, ethyl ester
59504-28-8, Pyrrolidine, 1-[[3-nitro-4-(1-
pyrrolidinyl)phenyl]sulfonyl]- 59504-30-2, Pyrrolidine,
1-(2-chloro-6-nitrophenyl)- 59504-31-3, Pyrrolidine,
1-(4,5-dichloro-2-nitrophenyl)- 59504-32-4, Pyrrolidine,
1-(4-bromo-2-nitrophenyl)- 59504-33-5, Benzoic acid,
3-nitro-2-(1-pyrrolidinyl)-, ethyl ester 59504-34-6, Pyrrolidine,
1-(2-nitro-p-tolyl)- 59504-35-7, Benzoic acid,
2-bromo-5-nitro-4-(1-pyrrolidinyl)-, ethyl ester 59504-36-8,
Piperidine, 1-[(3-nitro-4-piperidinophenyl)sulfonyl]- 59504-37-9,
Benzonitrile, 4-morpholino-3-nitro- 59504-38-0, Morpholine,
4-(4,5-dichloro-2-nitrophenyl)- 59504-39-1, 1H-Pyrrolo[1,2-
a]benzimidazole-6-carboxylic acid, 7-bromo-2,3-dihydro-, ethyl ester
59504-40-4, Pyrido[1,2-a]benzimidazole, 7,8-dichloro-1,2,3,4-
tetrahydro- 59504-41-5, Pyrido[1,2-a]benzimidazole,
7-bromo-1,2,3,4-tetrahydro- 59504-42-6, Piperidine,
1-[(1,2,3,4-tetrahydropyrido[1,2-a]benzimidazol-7-yl)sulfonyl]-
59504-43-7, 1H-[1,4]Oxazino[4,3-a]benzimidazole-8-carbonitrile,
3,4-dihydro- 59504-44-8, 1H-[1,4]Oxazino[4,3-a]benzimidazole,
7,8-dichloro-3,4-dihydro- 59504-45-9, Benzoic acid,
5-amino-2-chloro-4-(1-pyrrolidinyl)-, ethyl ester 59504-46-0,
Pyrrolidine, 1-[4-(1-pyrrolidinyl)metanilyl]- 59504-47-1, Benzoic
acid, 5-amino-2-bromo-4-(1-pyrrolidinyl)-, ethyl ester 59504-48-2,
Piperidine, 1-(4-piperidinometanilyl)- 59504-49-3, Benzonitrile,
3-amino-4-morpholino- 59504-50-6, Morpholine, 4-(2-amino-4,5-
dichlorophenyl)- 59504-51-7, 1H-Pyrrolo[1,2-a]benzimidazole-7-
carbonitrile, 6-bromo-2,3-dihydro- 59504-53-9,
1H-Pyrrolo[1,2-a]benzimidazole, 6-chloro-2,3-dihydro-7-nitro-
59504-54-0, Pyrido[1,2-a]benzimidazole, 7-bromo-1,2,3,4-tetrahydro-8-
nitro- 59504-55-1, 1H-[1,4]Oxazino[4,3-a]benzimidazole,
8-chloro-3,4-dihydro-7-nitro- 59504-56-2,
1H-Pyrrolo[1,2-a]benzimidazole, 7-amino-6-chloro-2,3-dihydro-
59504-57-3, Pyrido[1,2-a]benzimidazole, 8-amino-7-bromo-1,2,3,4-
tetrahydro- 59504-58-4, Pyrido[1,2-a]benzimidazole,
8-amino-7-chloro-1,2,3,4-tetrahydro- 59504-59-5,
1H-[1,4]Oxazino[4,3-a]benzimidazole, 7-amino-8-chloro-3,4-dihydro-
59504-60-8, 1H-Pyrrolo[1,2-a]benzimidazole-7-carbonitrile,
6-chloro-2,3-dihydro- 59504-61-9, 1H-Pyrrolo[1,2-a]benzimidazole-7-
carbonitrile, 2,3-dihydro- 59504-63-1, Pyrido[1,2-a]benzimidazole-
8-carbonitrile, 7-chloro-1,2,3,4-tetrahydro- 59504-64-2,
Pyrido[1,2-a]benzimidazole-8-carbonitrile, 1,2,3,4-tetrahydro-

59504-65-3, 1H-[1,4]Oxazino[4,3-a]benzimidazole-7-carbonitrile,
8-chloro-3,4-dihydro- 59504-66-4, 1H-Pyrrolo[1,2-a]benzimidazole-6-
carboxylic acid, 2,3-dihydro- 59504-67-5, 1H-Pyrrolo[1,2-
a]benzimidazole-8-carboxylic acid, 2,3-dihydro- 59504-68-6,
1H-Pyrrolo[1,2-a]benzimidazole-6-carboxylic acid,
7-chloro-2,3-dihydro- 59504-69-7, 1H-Pyrrolo[1,2-a]benzimidazole-6-
carbonitrile, 2,3-dihydro- 59504-70-0, Benzimidazo[1,2-
b]isoquinoline, 6,11-dihydro- 59504-76-6, 1H-Pyrrolo[1,2-
a]benzimidazolium, 2,3-dihydro-4-methyl-, iodide 59504-77-7,
1H-Pyrrolo[1,2-a]benzimidazolium, 4-ethyl-2,3-dihydro-, iodide
59504-78-8, 1H-Pyrrolo[1,2-a]benzimidazolium, 2,3-dihydro-4-(2-
hydroxyethyl)-, bromide 59504-79-9, 1H-Naphtho[2,3-d]pyrrolo[1,2-
a]imidazolium, 4-ethyl-2,3-dihydro-, iodide 59504-80-2,
1H-Pyrrolo[1,2-a]benzimidazolium, 6-chloro-4-ethyl-2,3-dihydro-,
iodide 59504-81-3, 1H-Pyrrolo[1,2-a]benzimidazolium,
8-chloro-4-ethyl-2,3-dihydro-, iodide 59504-82-4,
1H-Pyrrolo[1,2-a]benzimidazolium, 6,7-dichloro-2,3-dihydro-4-(2-
hydroxyethyl)-, bromide 59504-83-5, 1H-Pyrrolo[1,2-
a]benzimidazolium, 4-[4-[(acetylamino)sulfonyl]butyl]-6,7-dichloro-
2,3-dihydro-, bromide 59504-84-6, 1H-Pyrrolo[1,2-
a]benzimidazolium, 6,7-dichloro-2,3-dihydro-4-[2-
[(methylsulfonyl)amino]-2-oxoethyl]-, bromide 59504-85-7,
1H-Pyrrolo[1,2-a]benzimidazolium, 6-bromo-4-ethyl-2,3-dihydro-,
iodide 59504-86-8, 1H-Pyrrolo[1,2-a]benzimidazolium,
6-(ethoxycarbonyl)-2,3-dihydro-4-methyl-, iodide 59504-87-9,
1H-Pyrrolo[1,2-a]benzimidazolium, 8-(ethoxycarbonyl)-2,3-dihydro-4-
methyl-, iodide 59504-88-0, 1H-Pyrrolo[1,2-a]benzimidazolium,
7-chloro-6-(ethoxycarbonyl)-2,3-dihydro-4-methyl-, iodide
59504-89-1, 1H-Pyrrolo[1,2-a]benzimidazolium, 4-(2-carboxyethyl)-7-
chloro-6-(ethoxycarbonyl)-2,3-dihydro-, bromide 59504-90-4,
1H-Pyrrolo[1,2-a]benzimidazolium, 7-chloro-6-(ethoxycarbonyl)-2,3-
dihydro-4-[3-(sulfooxy)propyl]-, inner salt 59504-92-6,
1H-Pyrrolo[1,2-a]benzimidazolium, 7-chloro-6-(ethoxycarbonyl)-2,3-
dihydro-4-[2-[(methylsulfonyl)amino]-2-oxoethyl]-, bromide
59504-93-7, 1H-Pyrrolo[1,2-a]benzimidazolium, 2,3-dihydro-4-methyl-6-
(1-pyrrolidinylsulfonyl)-, iodide 59504-94-8, 1H-Pyrrolo[1,2-
a]benzimidazolium, 4-ethyl-2,3-dihydro-6-(1-pyrrolidinylsulfonyl)-,
iodide 59504-95-9, 1H-Pyrrolo[1,2-a]benzimidazolium,
4-ethyl-2,3-dihydro-6-methyl-, iodide 59504-96-0,
1H-Pyrrolo[1,2-a]benzimidazolium, 7-bromo-4-(2-carboxyethyl)-6-
(ethoxycarbonyl)-2,3-dihydro-, bromide 59504-98-2,
1H-Pyrrolo[1,2-a]benzimidazolium, 4-[4-[(acetylamino)sulfonyl]butyl]-
7-bromo-6-(ethoxycarbonyl)-2,3-dihydro-, bromide 59504-99-3,
1H-Pyrrolo[1,2-a]benzimidazolium, 7-bromo-6-(ethoxycarbonyl)-2,3-
dihydro-4-[2-[(methylsulfonyl)amino]-2-oxoethyl]-, bromide

59505-00-9, 1H-Pyrrolo[1,2-a]benzimidazolium, 7-amino-2,3-dihydro-4-methyl-, iodide 59505-01-0, 1H-Pyrrolo[1,2-a]benzimidazolium, 6-bromo-7-cyano-4-ethyl-2,3-dihydro-, iodide 59505-02-1, 1H-Pyrrolo[1,2-a]benzimidazolium, 6-chloro-7-cyano-4-ethyl-2,3-dihydro-, iodide 59505-03-2, 1H-Pyrrolo[1,2-a]benzimidazolium, 7-cyano-4-ethyl-2,3-dihydro-, iodide 59505-04-3, 1H-Pyrrolo[1,2-a]benzimidazolium, 7-cyano-2,3-dihydro-4-(2-hydroxyethyl)-, bromide 59505-05-4, 1H-Pyrrolo[1,2-a]benzimidazolium, 7-chloro-4-ethyl-2,3-dihydro-, iodide 59505-06-5, 1H-Pyrrolo[1,2-a]benzimidazolium, 6-carboxy-2,3-dihydro-4-methyl-, iodide 59505-07-6, 1H-Pyrrolo[1,2-a]benzimidazolium, 8-carboxy-2,3-dihydro-4-methyl-, iodide 59505-08-7, 1H-Pyrrolo[1,2-a]benzimidazolium, 6-carboxy-7-chloro-2,3-dihydro-4-methyl-, iodide 59505-09-8, 1H-Pyrrolo[1,2-a]benzimidazolium, 7-(acetylamino)-4-ethyl-2,3-dihydro-, iodide 59505-10-1, 1H-Pyrrolo[1,2-a]benzimidazolium, 6-cyano-2,3-dihydro-4-(2-hydroxyethyl)-, bromide 59505-11-2, 1H-Pyrrolo[1,2-a]benzimidazolium, 6-cyano-2,3-dihydro-4-[2-[(methylsulfonyl)amino]-2-oxoethyl]-, bromide 59505-12-3, Pyrido[1,2-a]benzimidazolium, 1,2,3,4-tetrahydro-5-methyl-, iodide 59505-13-4, Pyrido[1,2-a]benzimidazolium, 5-ethyl-1,2,3,4-tetrahydro-, iodide 59505-14-5, Pyrido[1,2-a]benzimidazolium, 1,2,3,4-tetrahydro-5-[3-(sulfooxy)propyl]-, inner salt 59505-15-6, Pyrido[1,2-a]benzimidazolium, 5-[4-[(acetylamino)sulfonyl]butyl]-1,2,3,4-tetrahydro-, bromide 59505-16-7, Pyrido[1,2-a]benzimidazolium, 1,2,3,4-tetrahydro-5-[2-[(methylsulfonyl)amino]-2-oxoethyl]-, bromide 59505-17-8, Pyrido[1,2-a]benzimidazolium, 7-chloro-5-ethyl-1,2,3,4-tetrahydro-, iodide 59505-18-9, Pyrido[1,2-a]benzimidazolium, 5-(2-carboxyethyl)-7-chloro-1,2,3,4-tetrahydro-, bromide 59505-19-0, Pyrido[1,2-a]benzimidazolium, 7-chloro-1,2,3,4-tetrahydro-5-[3-(sulfooxy)propyl]-, inner salt 59505-20-3, Pyrido[1,2-a]benzimidazolium, 7,8-dichloro-5-ethyl-1,2,3,4-tetrahydro-, iodide 59505-21-4, Pyrido[1,2-a]benzimidazolium, 7,8-dichloro-1,2,3,4-tetrahydro-5-(2-hydroxyethyl)-, bromide 59505-22-5, Pyrido[1,2-a]benzimidazolium, 7,8-dichloro-1,2,3,4-tetrahydro-5-[2-[(methylsulfonyl)amino]-2-oxoethyl]-, bromide 59505-23-6, Pyrido[1,2-a]benzimidazolium, 7-bromo-5-ethyl-1,2,3,4-tetrahydro-, iodide 59505-24-7, Pyrido[1,2-a]benzimidazolium, 7-cyano-5-ethyl-1,2,3,4-tetrahydro-, iodide 59505-25-8, Pyrido[1,2-a]benzimidazolium, 5-ethyl-1,2,3,4-tetrahydro-7-(1-piperidinylsulfonyl)-, iodide 59505-26-9, Pyrido[1,2-a]benzimidazolium, 1,2,3,4-tetrahydro-5-methyl-7-(trifluoromethyl)-, iodide 59505-27-0, Pyrido[1,2-a]benzimidazolium, 8-chloro-5-ethyl-1,2,3,4-tetrahydro-, iodide 59505-28-1, Pyrido[1,2-a]benzimidazolium,

7-bromo-8-cyano-5-ethyl-1,2,3,4-tetrahydro-, iodide 59505-29-2,
Pyrido[1,2-a]benzimidazolium, 7-chloro-8-cyano-5-ethyl-1,2,3,4-
tetrahydro-, iodide 59505-30-5, Pyrido[1,2-a]benzimidazolium,
8-cyano-5-ethyl-7-fluoro-1,2,3,4-tetrahydro-, iodide 59505-31-6,
Pyrido[1,2-a]benzimidazolium, 8-cyano-5-ethyl-1,2,3,4-tetrahydro-,
iodide 59505-32-7, Benzimidazo[1,2-b]isoquinolinium,
6,11-dihydro-5-methyl-, iodide 59505-33-8, Dipyrido[1,2-a:1',2'-
a']benzo[1,2-d:5,4-d']diimidazolium, 5,7-diethyl-1,2,3,4,8,9,10,11-
octahydro-, diiodide 59505-34-9, 1H-[1,4]Oxazino[4,3-
a]benzimidazolium, 8-chloro-10-ethyl-3,4-dihydro-, iodide
59505-34-9, 1H-[1,4]Oxazino[4,3-a]benzimidazolium,
8-chloro-10-ethyl-3,4-dihydro-, iodide 59505-36-1,
1H-[1,4]Oxazino[4,3-a]benzimidazolium, 7,8-dichloro-10-ethyl-3,4-
dihydro-, iodide 59505-37-2, 1H-[1,4]Oxazino[4,3-
a]benzimidazolium, 8-chloro-7-cyano-3,4-dihydro-10-methyl-, iodide
59505-38-3, 1H-[1,4]Oxazino[4,3-a]benzimidazolium,
8-chloro-7-cyano-10-ethyl-3,4-dihydro-, iodide 59505-48-5,
1H-[1,4]Oxazino[4,3-a]benzimidazolium, 8-chloro-1-[(8-chloro-10-
ethyl-3,4-dihydro-10H-[1,4]oxazino[4,3-a]benzimidazol-1-
yl)methylene]-10-ethyl-3,4-dihydro-, iodide 59505-49-6,
1H-Pyrrolo[1,2-a]benzimidazolium, 6-(ethoxycarbonyl)-3-[[6-
(ethoxycarbonyl)-2,4-dihydro-4-methyl-1H-pyrrolo[1,2-a]benzimidazol-
3-yl]methylene]-2,3-dihydro-4-methyl-, iodide 59505-50-9,
1H-Pyrrolo[1,2-a]benzimidazolium, 4-[2-(acetyloxy)ethyl]-3-[[4-[2-
(acetyloxy)ethyl]-6-cyano-2,4-dihydro-1H-pyrrolo[1,2-a]benzimidazol-
3-yl]methylene]-6-cyano-2,3-dihydro-, bromide 59505-52-1,
1H-Pyrrolo[1,2-a]benzimidazolium, 4-[2-(acetyloxy)ethyl]-7-cyano-3-
[(3-ethyl-2-thiazolidinylidene)ethylidene]-2,3-dihydro-, perchlorate
59505-53-2, 1H-Pyrrolo[1,2-a]benzimidazolium, 6-bromo-7-cyano-4-
ethyl-3-[(3-ethyl-2-thiazolidinylidene)ethylidene]-2,3-dihydro-,
iodide 59505-53-2, 1H-Pyrrolo[1,2-a]benzimidazolium,
6-bromo-7-cyano-4-ethyl-3-[(3-ethyl-2-thiazolidinylidene)ethylidene]-
2,3-dihydro-, iodide 59505-54-3, 1H-Pyrrolo[1,2-a]benzimidazolium,
6-chloro-4-ethyl-3-[(3-ethyl-2-thiazolidinylidene)ethylidene]-2,3-
dihydro-, iodide 59505-55-4, Pyrido[1,2-a]benzimidazolium,
7-cyano-5-ethyl-4-[(3-ethyl-2-thiazolidinylidene)ethylidene]-1,2,3,4-
tetrahydro-, iodide 59505-56-5, Pyrido[1,2-a]benzimidazolium,
8-cyano-5-ethyl-4-[(3-ethyl-2-thiazolidinylidene)ethylidene]-1,2,3,4-
tetrahydro-, iodide 59505-58-7, Pyrido[1,2-a]benzimidazolium,
8-cyano-5-ethyl-4-[(3-ethyl-2-thiazolidinylidene)ethylidene]-7-
fluoro-1,2,3,4-tetrahydro-, iodide 59505-59-8,
1H-[1,4]Oxazino[4,3-a]benzimidazolium, 8-chloro-10-ethyl-1-[(3-ethyl-
2-thiazolidinylidene)ethylidene]-3,4-dihydro-, iodide 59505-60-1,
1H-[1,4]Oxazino[4,3-a]benzimidazolium, 8-cyano-10-ethyl-1-[(3-ethyl-
2-thiazolidinylidene)ethylidene]-3,4-dihydro-, iodide 59505-61-2,

1H-Pyrrolo[1,2-a]benzimidazolium, 4-ethyl-3-[(3-ethyl-2-thiazolidinylidene)ethylidene]-2,3-dihydro-, iodide 59505-62-3,
1H-Pyrrolo[1,2-a]benzimidazolium, 7-chloro-4-ethyl-3-[(3-ethyl-2-thiazolidinylidene)ethylidene]-2,3-dihydro-, iodide 59505-63-4,
1H-Pyrrolo[1,2-a]benzimidazolium, 8-chloro-4-ethyl-3-[(3-ethyl-2-thiazolidinylidene)ethylidene]-2,3-dihydro-, iodide 59505-64-5,
1H-Pyrrolo[1,2-a]benzimidazolium, 6,7-dichloro-4-ethyl-3-[(3-ethyl-2-thiazolidinylidene)ethylidene]-2,3-dihydro-, iodide 59505-66-7,
1H-Pyrrolo[1,2-a]benzimidazolium, 6-(ethoxycarbonyl)-3-[(3-ethyl-2-thiazolidinylidene)ethylidene]-2,3-dihydro-4-methyl-, iodide 59505-67-8,
1H-Pyrrolo[1,2-a]benzimidazolium, 8-carboxy-3-[(3-ethyl-2-thiazolidinylidene)ethylidene]-2,3-dihydro-4-methyl-, iodide 59505-68-9,
1H-Pyrrolo[1,2-a]benzimidazolium, 4-[4-[(acetylamino)sulfonyl]butyl]-7-chloro-6-(ethoxycarbonyl)-3-[(3-ethyl-2-thiazolidinylidene)ethylidene]-2,3-dihydro-, bromide 59505-69-0,
1H-Pyrrolo[1,2-a]benzimidazolium, 7-chloro-6-(ethoxycarbonyl)-3-[(3-ethyl-2-thiazolidinylidene)ethylidene]-2,3-dihydro-4-[2-[(methylsulfonyl)amino]-2-oxoethyl]-, inner salt 59505-71-4,
1H-Pyrrolo[1,2-a]benzimidazolium, 3-[(3-ethyl-2-thiazolidinylidene)ethylidene]-2,3-dihydro-4-methyl-6-(1-pyrrolidinylsulfonyl)-, iodide 59505-72-5,
1H-Naphtho[2,3-d]pyrrolo[1,2-a]imidazolium, 4-ethyl-3-[(3-ethyl-2-thiazolidinylidene)ethylidene]-2,3-dihydro-, iodide 59505-73-6,
Pyrido[1,2-a]benzimidazolium, 5-ethyl-4-[(3-ethyl-2-thiazolidinylidene)ethylidene]-1,2,3,4-tetrahydro-, iodide 59505-74-7,
Pyrido[1,2-a]benzimidazolium, 7-chloro-5-ethyl-4-[(3-ethyl-2-thiazolidinylidene)ethylidene]-1,2,3,4-tetrahydro-, iodide 59505-75-8,
Pyrido[1,2-a]benzimidazolium, 7,8-dichloro-5-ethyl-4-[(3-ethyl-2-thiazolidinylidene)ethylidene]-1,2,3,4-tetrahydro-, iodide 59505-77-0,
Pyrido[1,2-a]benzimidazolium, 7-bromo-5-ethyl-4-[(3-ethyl-2-thiazolidinylidene)ethylidene]-1,2,3,4-tetrahydro-, iodide 59505-78-1,
Pyrido[1,2-a]benzimidazolium, 5-ethyl-4-[(3-ethyl-2-thiazolidinylidene)ethylidene]-1,2,3,4-tetrahydro-7-(1-piperidinylsulfonyl)-, iodide 59505-79-2,
1H-Pyrrolo[1,2-a]benzimidazolium, 4-ethyl-3-[(3-ethyl-2-thiazolidinylidene)ethylidene]-2,3-dihydro-6-methyl-, iodide 59505-80-5,
1H-Pyrrolo[1,2-a]benzimidazolium, 6-cyano-4-ethyl-3-[(3-ethyl-2-thiazolidinylidene)ethylidene]-2,3-dihydro-, iodide 59505-81-6,
1H-Pyrrolo[1,2-a]benzimidazolium, 6-carboxy-3-[(3-ethyl-2-thiazolidinylidene)ethylidene]-2,3-dihydro-4-methyl-, iodide 59505-82-7,
Pyrido[1,2-a]benzimidazolium, 7-bromo-8-cyano-5-ethyl-4-[(3-ethyl-2-thiazolidinylidene)ethylidene]-1,2,3,4-tetrahydro-, iodide 59505-83-8,
1H-Pyrrolo[1,2-a]benzimidazolium, 4-[4-[(acetylamino)sulfonyl]butyl]-7-bromo-6-(ethoxycarbonyl)-3-[(3-ethyl-2-thiazolidinylidene)ethylidene]-2,3-dihydro-, bromide

59505-84-9, 1H-Pyrrolo[1,2-a]benzimidazolium, 7-bromo-6-(ethoxycarbonyl)-3-[(3-ethyl-2-thiazolidinylidene)ethylidene]-2,3-dihydro-4-[2-[(methylsulfonyl)amino]-2-oxoethyl]-, inner salt
59505-87-2, Pyrido[1,2-a]benzimidazolium, 5-ethyl-4-[(3-ethyl-2-thiazolidinylidene)ethylidene]-1,2,3,4-tetrahydro-7-(trifluoromethyl)-, iodide 59505-89-4, 1H-Pyrrolo[1,2-a]benzimidazolium, 8-chloro-4-ethyl-3-[(3-ethyl-2-selenazolidinylidene)ethylidene]-2,3-dihydro-, iodide 59505-91-8, 1H-Pyrrolo[1,2-a]benzimidazolium, 4-ethyl-3-[(3-ethyl-5-methyl-2(3H)-benzoxazolyliidene)ethylidene]-2,3-dihydro-, perchlorate
59505-92-9, 1H-Pyrrolo[1,2-a]benzimidazolium, 7-chloro-6-(ethoxycarbonyl)-3-[(3-ethyl-5,6-dimethyl-2(3H)-benzoxazolyliidene)ethylidene]-2,3-dihydro-4-methyl-, iodide 59505-93-0, 1H-Pyrrolo[1,2-a]benzimidazolium, 3-[(3-ethyl-5-methyl-2(3H)-benzoxazolyliidene)ethylidene]-2,3-dihydro-4-methyl-6-(1-pyrrolidinylsulfonyl)-, iodide 59505-95-2, 1H-Pyrrolo[1,2-a]benzimidazolium, 8-carboxy-3-[(3-ethyl-5,6-dimethyl-2(3H)-benzoxazolyliidene)ethylidene]-2,3-dihydro-4-methyl-, iodide 59505-96-3, 1H-[1,4]Oxazino[4,3-a]benzimidazolium, 8-cyano-10-ethyl-1-[(3-ethyl-5,6-dimethyl-2(3H)-benzoxazolyliidene)ethylidene]-3,4-dihydro-, iodide 59505-97-4, 1H-Pyrrolo[1,2-a]benzimidazolium, 6-cyano-4-ethyl-3-[(3-ethyl-5,6-dimethyl-2(3H)-benzoxazolyliidene)ethylidene]-2,3-dihydro-, iodide 59505-98-5, 1H-Pyrrolo[1,2-a]benzimidazolium, 6-carboxy-7-chloro-3-[(3-ethyl-5,6-dimethyl-2(3H)-benzoxazolyliidene)ethylidene]-2,3-dihydro-4-methyl-, iodide 59506-00-2, 1H-Pyrrolo[1,2-a]benzimidazolium, 4-[2-(acetyloxy)ethyl]-3-[(3-ethyl-5-methyl-2(3H)-benzoxazolyliidene)ethylidene]-2,3-dihydro-, perchlorate 59506-03-5, 1H-Pyrrolo[1,2-a]benzimidazolium, 4-ethyl-3-[(3-ethyl-5,6-dimethyl-2(3H)-benzoxazolyliidene)ethylidene]-2,3-dihydro-, iodide 59506-04-6, 1H-Pyrrolo[1,2-a]benzimidazolium, 6-bromo-7-cyano-4-ethyl-3-[(3-ethyl-5,6-dimethyl-2(3H)-benzoxazolyliidene)ethylidene]-2,3-dihydro-, iodide 59506-05-7, 1H-Pyrrolo[1,2-a]benzimidazolium, 8-(ethoxycarbonyl)-3-[(3-ethyl-5,6-dimethyl-2(3H)-benzoxazolyliidene)ethylidene]-2,3-dihydro-4-methyl-, iodide 59506-06-8, 1H-Naphtho[2,3-d]pyrrolo[1,2-a]imidazolium, 4-ethyl-3-[(3-ethyl-5,6-dimethyl-2(3H)-benzoxazolyliidene)ethylidene]-2,3-dihydro-, iodide 59506-07-9, Pyrido[1,2-a]benzimidazolium, 7-chloro-5-ethyl-4-[(3-ethyl-5-methyl-2(3H)-benzoxazolyliidene)ethylidene]-1,2,3,4-tetrahydro-, iodide 59506-08-0, Pyrido[1,2-a]benzimidazolium, 7,8-dichloro-5-ethyl-4-[(3-ethyl-5,6-dimethyl-2(3H)-benzoxazolyliidene)ethylidene]-1,2,3,4-tetrahydro-, iodide 59506-10-4, 1H-Pyrrolo[1,2-a]benzimidazolium, 6-chloro-4-ethyl-3-[(3-ethyl-5-methyl-2(3H)-benzoxazolyliidene)ethylidene]-2,3-dihydro-, iodide 59506-11-5,

1H-Pyrrolo[1,2-a]benzimidazolium, 6,7-dichloro-4-ethyl-3-[(3-ethyl-5,6-dimethyl-2(3H)-benzoxazolylidene)ethylidene]-2,3-dihydro-, iodide 59506-12-6

, 1H-Pyrrolo[1,2-a]benzimidazolium, 4-ethyl-3-[(3-ethyl-5,6-dimethyl-2(3H)-benzoxazolylidene)ethylidene]-6-fluoro-2,3-dihydro-, iodide 59506-14-8, 1H-Pyrrolo[1,2-a]benzimidazolium, 4-ethyl-3-[(3-ethyl-5-methyl-2(3H)-benzoxazolylidene)ethylidene]-7-fluoro-2,3-dihydro-, perchlorate 59506-15-9, 1H-Pyrrolo[1,2-a]benzimidazolium, 6-(ethoxycarbonyl)-3-[(3-ethyl-5,6-dimethyl-2(3H)-benzoxazolylidene)ethylidene]-2,3-dihydro-4-methyl-, iodide 59506-16-0, 1H-Naphtho[2,3-d]pyrrolo[1,2-a]imidazolium, 4-ethyl-3-[(3-ethyl-5-methyl-2(3H)-benzoxazolylidene)ethylidene]-2,3-dihydro-, iodide 59506-17-1, Pyrido[1,2-a]benzimidazolium, 5-ethyl-4-[(3-ethyl-5,6-dimethyl-2(3H)-benzoxazolylidene)ethylidene]-7-fluoro-1,2,3,4-tetrahydro-, iodide 59506-18-2, 1H-[1,4]Oxazino[4,3-a]benzimidazolium, 8-chloro-10-ethyl-1-[(3-ethyl-5,6-dimethyl-2(3H)-benzoxazolylidene)ethylidene]-3,4-dihydro-, iodide 59506-19-3, Benzimidazo[1,2-b]isoquinolinium, 6-[(3-ethyl-5,6-dimethyl-2(3H)-benzoxazolylidene)ethylidene]-6,11-dihydro-5-methyl-, iodide 59506-22-8, 1H-Pyrrolo[1,2-a]benzimidazolium, 3-[(5,6-dichloro-1,3-diethyl-1,3-dihydro-2H-benzimidazol-2-ylidene)ethylidene]-4-ethyl-2,3-dihydro-, iodide 59506-23-9, 1H-Pyrrolo[1,2-a]benzimidazolium, 6-chloro-3-[(5-chloro-1,3-diethyl-1,3-dihydro-2H-benzimidazol-2-ylidene)ethylidene]-4-ethyl-2,3-dihydro-, iodide 59506-24-0, Benzimidazolium compounds, 5-chloro-1,3-diethyl-2-[2-(4-ethyl-6-fluoro-2,4-dihydro-1H-pyrrolo[1,2-a]benzimidazol-3-yl)vinyl]-, iodide 59506-25-1, 1H-Pyrrolo[1,2-a]benzimidazolium, 3-[(5-cyano-1,3-diethyl-1,3-dihydro-2H-benzimidazol-2-ylidene)ethylidene]-4-ethyl-7-fluoro-2,3-dihydro-, iodide 59506-26-2, 1H-Pyrrolo[1,2-a]benzimidazolium, 3-[(5-cyano-1,3-diethyl-1,3-dihydro-2H-benzimidazol-2-ylidene)ethylidene]-4-ethyl-2,3-dihydro-, iodide 59506-27-3, Pyrido[1,2-a]benzimidazolium, 4-[(5,6-dichloro-1,3-diethyl-1,3-dihydro-2H-benzimidazol-2-ylidene)ethylidene]-5-ethyl-1,2,3,4-tetrahydro-, iodide 59506-28-4, Pyrido[1,2-a]benzimidazolium, 4-[(5-chloro-1,3-diethyl-1,3-dihydro-2H-benzimidazol-2-ylidene)ethylidene]-5-ethyl-7-fluoro-1,2,3,4-tetrahydro-, iodide 59506-29-5, Pyrido[1,2-a]benzimidazolium, 4-[(5,6-dichloro-1,3-diethyl-1,3-dihydro-2H-benzimidazol-2-ylidene)ethylidene]-5-ethyl-1,2,3,4-tetrahydro-7-(1-piperidinylsulfonyl)-, iodide 59506-30-8, Pyrido[1,2-a]benzimidazolium, 7,8-dichloro-4-[(5,6-dichloro-1,3-diethyl-1,3-dihydro-2H-benzimidazol-2-ylidene)ethylidene]-1,2,3,4-tetrahydro-5-(2-hydroxyethyl)-, iodide 59506-31-9, Pyrido[1,2-a]benzimidazolium, 7-bromo-4-[(5-chloro-1,3-diethyl-1,3-dihydro-2H-benzimidazol-2-ylidene)ethylidene]-5-ethyl-1,2,3,4-

tetrahydro-, iodide 59506-32-0, 1H-[1,4]Oxazino[4,3-a]benzimidazolium, 8-chloro-1-[(5-chloro-1,3-diethyl-1,3-dihydro-2H-benzimidazol-2-ylidene)ethylidene]-10-ethyl-3,4-dihydro-, iodide 59506-33-1, 1H-Pyrrolo[1,2-a]benzimidazolium, 6-cyano-3-[(5-cyano-1,3-diethyl-1,3-dihydro-2H-benzimidazol-2-ylidene)ethylidene]-2,3-dihydro-4-[2-[(methylsulfonyl)amino]-2-oxoethyl]-, inner salt 59506-34-2, 1H-Pyrrolo[1,2-a]benzimidazolium, 7-chloro-3-[(5,6-dichloro-1,3-diethyl-1,3-dihydro-2H-benzimidazol-2-ylidene)ethylidene]-4-ethyl-2,3-dihydro-, iodide 59506-35-3, 1H-Pyrrolo[1,2-a]benzimidazolium, 6,7-dichloro-3-[(5,6-dichloro-1,3-diethyl-1,3-dihydro-2H-benzimidazol-2-ylidene)ethylidene]-2,3-dihydro-4-(2-hydroxyethyl)-, iodide 59506-36-4, 1H-Pyrrolo[1,2-a]benzimidazolium, 6,7-dichloro-3-[(5,6-dichloro-1,3-diethyl-1,3-dihydro-2H-benzimidazol-2-ylidene)ethylidene]-4-ethyl-2,3-dihydro-, iodide 59506-38-6, 1H-Pyrrolo[1,2-a]benzimidazolium, 7-(acetamino)-3-[(5,6-dichloro-1,3-diethyl-1,3-dihydro-2H-benzimidazol-2-ylidene)ethylidene]-4-ethyl-2,3-dihydro-, iodide 59506-39-7, 1H-Pyrrolo[1,2-a]benzimidazolium, 7-chloro-3-[(5-chloro-1,3-diethyl-1,3-dihydro-2H-benzimidazol-2-ylidene)ethylidene]-4-ethyl-2,3-dihydro-, iodide 59506-40-0, 1H-Pyrrolo[1,2-a]benzimidazolium, 3-[(5,6-dichloro-1,3-diethyl-1,3-dihydro-2H-benzimidazol-2-ylidene)ethylidene]-4-ethyl-7-fluoro-2,3-dihydro-, iodide 59506-41-1, 1H-Naphtho[2,3-d]pyrrolo[1,2-a]imidazolium, 3-[(5,6-dichloro-1,3-diethyl-1,3-dihydro-2H-benzimidazol-2-ylidene)ethylidene]-4-ethyl-2,3-dihydro-, iodide 59506-42-2, Pyrido[1,2-a]benzimidazolium, 5-[4-[(acetamino)sulfonyl]butyl]-4-[(5,6-dichloro-1,3-diethyl-1,3-dihydro-2H-benzimidazol-2-ylidene)ethylidene]-1,2,3,4-tetrahydro-, iodide 59506-43-3, Pyrido[1,2-a]benzimidazolium, 7-chloro-4-[(5-chloro-1,3-diethyl-1,3-dihydro-2H-benzimidazol-2-ylidene)ethylidene]-5-ethyl-1,2,3,4-tetrahydro-, iodide 59506-44-4, Pyrido[1,2-a]benzimidazolium, 7,8-dichloro-4-[(5,6-dichloro-1,3-diethyl-1,3-dihydro-2H-benzimidazol-2-ylidene)ethylidene]-5-ethyl-1,2,3,4-tetrahydro-, iodide 59506-45-5, Pyrido[1,2-a]benzimidazolium, 7,8-dichloro-4-[(5-chloro-1,3-diethyl-1,3-dihydro-2H-benzimidazol-2-ylidene)ethylidene]-5-ethyl-1,2,3,4-tetrahydro-, iodide 59506-47-7, 1H-Pyrrolo[1,2-a]benzimidazolium, 7-amino-3-[(5,6-dichloro-1,3-diethyl-1,3-dihydro-2H-benzimidazol-2-ylidene)ethylidene]-2,3-dihydro-4-methyl-, iodide 59506-48-8, Pyrido[1,2-a]benzimidazolium, 4-[(3-ethyl-2(3H)-benzoselenazolyliidene)ethylidene]-1,2,3,4-tetrahydro-5-methyl-7-(trifluoromethyl)-, iodide 59506-49-9, 1H-Pyrrolo[1,2-a]benzimidazolium, 7-chloro-6-(ethoxycarbonyl)-3-[(3-ethyl-2-thiazolidinylidene)ethylidene]-2,3-dihydro-4-methyl-, iodide 59506-50-2, 1H-[1,4]Oxazino[4,3-a]benzimidazolium, 7,8-dichloro-10-ethyl-1-[(3-ethyl-2-

thiazolidinylidene)ethylidene]-3,4-dihydro-, iodide 59506-51-3,
1H-Pyrrolo[1,2-a]benzimidazolium, 8-chloro-4-ethyl-3-[(3-ethyl-2(3H)-
benzoselenazolylidene)ethylidene]-2,3-dihydro-, iodide 59506-52-4,
Pyrido[1,2-a]benzimidazolium, 7,8-dichloro-4-[(3-ethyl-5-phenyl-
2(3H)-benzoxazolylidene)ethylidene]-1,2,3,4-tetrahydro-5-[2-
[(methylsulfonyl)amino]-2-oxoethyl]-, inner salt 59506-53-5,
Benzimidazo[1,2-b]isoquinolinium, 6-[(5,6-dichloro-1,3-diethyl-1,3-
dihydro-2H-benzimidazol-2-ylidene)ethylidene]-6,11-dihydro-5-methyl-
, iodide 59506-54-6, Rhodanine, 5-[(2,4-dihydro-4-methyl-1H-
pyrrolo[1,2-a]benzimidazol-3-yl)methylene]-3-ethyl- 59506-55-7,
Rhodanine, 5-[(6-bromo-4-ethyl-2,4-dihydro-1H-pyrrolo[1,2-
a]benzimidazol-3-yl)methylene]-3-ethyl- 59506-56-8, Rhodanine,
3-ethyl-5-[(1,2,3,5-tetrahydro-5-methylpyrido[1,2-a]benzimidazol-4-
yl)methylene]- 59506-57-9, Rhodanine, 5-[(7,8-dichloro-5-ethyl-
1,2,3,5-tetrahydropyrido[1,2-a]benzimidazol-4-yl)methylene]-3-ethyl-
59506-58-0, Rhodanine, 3-ethyl-5-[(5-ethyl-1,2,3,5-tetrahydro-7-
(piperidinosulfonyl)pyrido[1,2-a]benzimidazol-4-yl)methylene]-
59506-60-4, 1H-Pyrrolo[1,2-a]benzimidazole-6-carboxylic acid,
3-[(3-ethyl-4-oxo-2-thioxo-5-thiazolidinylidene)methyl]-2,4-dihydro-
4-methyl-, ethyl ester 59506-61-5, Rhodanine, 5-[(5,11-dihydro-5-
methylbenzimidazo[1,2-b]isoquinolin-6-yl)methylene]-3-ethyl-
59506-63-7, Rhodanine, 5-[(7-chloro-5-ethyl-1,2,3,5-
tetrahydropyrido[1,2-a]benzimidazol-4-yl)methylene]-3-ethyl-
59506-66-0, [Δ2,5'-Bithiazolidine]-2',4,4'-trione,
5-[(7-chloro-5-ethyl-1,2,3,5-tetrahydropyrido[1,2-a]benzimidazol-4-
yl)methylene]-3,3'-diethyl-2'-thio- 59506-68-2, Rhodanine,
5,5'-[(5,7-diethyl-1,2,3,5,7,9,10,11-octahydrodipyrido[1,2-a:1',2'-
a']benzo[1,2-d:5,4-d']diimidazole-4,8-diyl)dimethylidyne]bis[3-ethyl-
59506-69-3, 1H-Pyrrolo[1,2-a]benzimidazolium,
3-[[4-(dimethylamino)phenyl]methylene]-4-ethyl-2,3-dihydro-, iodide
(prepn. of)

L39 ANSWER 22 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1957:12834 HCAPLUS

DOCUMENT NUMBER: 51:12834

ORIGINAL REFERENCE NO.: 51:2740e-i,2741a-d

TITLE: Azo colorants derived from 1,2-
dimethylbenzothiazolium salts

AUTHOR(S): Le Bris, Marie T.

CORPORATE SOURCE: Univ. Nancy, Fr.

SOURCE: Ann. chim. (Paris) [13] (1956), 1, 328-79

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

GI For diagram(s), see printed CA Issue.

AB cf. Wahl and Le B., C.A. 49, 3537c. 2,3-Dimethylbenzothiazolium

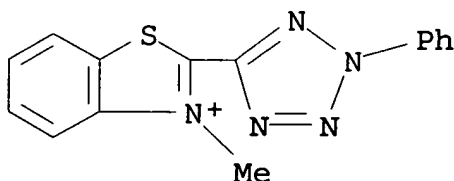
methosulfate, in 25% aq. soln. below 10°, reacted with diazonium salts derived from o-aminophenols, anthranilic acid derivs., or o-sulfanilic acid. The diazonium salt soln. was buffered with NaOAc just before use. In most cases the reaction was slow and gave exclusively the monoazo compds., o-MeN.C₆H₄.S.C:CHN₂Ar (I), rather than the bisazo derivs., o-MeN.C₆H₄.S.C:C(N₂Ar)₂ (II). For the I prepd. (in yields usually 40-70%), Ar, color, and m.p. were: 2-hydroxyphenyl, orange-red, 191-1.5° (HCl salt, garnet-red); 2-hydroxy-5-nitrophenyl, red, 250° (HCl-salt, orange-yellow, m. 250.5°); 2-hydroxy-4-nitrophenyl, green, 243.5° (HCl salt, maroon, m. 224°); 2-hydroxy-5-chlorophenyl, green, 217° (HCl salt, brown); 2-hydroxy-5-sulfonamidophenyl, orange red, 248° (HCl salt, orange-yellow); 2-hydroxy-5-sulfophenyl, orange-red; 2-carboxyphenyl (IIa), orange-red, 253° (HCl salt, orange-red, m. 226.5-27°); 2-sulfophenyl, orange-red; 2-(carbomethoxy)phenyl (IIb) (prepd. by esterification of IIa), (IIb.H₂SO₄, orange-red, m. 203.5-204°). If the reaction was carried out in strongly alk. soln. below 0°, the II could be isolated, although often in low yields and in impure condition because of their sensitivity to alkali. For II thus prepd., Ar, color, and m.p. were: 2-hydroxyphenyl, dark green, 255°; 2-hydroxy-5-chlorophenyl, dark green, 274°; 2-hydroxy-5-sulfonamidophenyl, 288.5°; 2-sulfophenyl, red; 2-(carboxymethyl)phenyl, red, 200° (HCl salt, red, m. 123.5°); 2-carboxyphenyl (prepd. by sapon. of the dimethyl ester, or by reaction of the monoazo compd. with more diazonium salt), could not be purified. The I reacted readily with a 2nd equiv. of diazonium salt to give II, or to give o-MeN.C₆H₄.S.C:C(N₂Ar)(N₄Ar') (III). For III thus prepd. (in good yields, up to 100%), Ar and Ar', color, and m.p. were: 2-hydroxyphenyl and 4-chlorophenyl, red, 255°; 2-hydroxyphenyl and 2-hydroxy-5-sulfonamidophenyl, deep red, could not be crystd.; 2-carboxyphenyl and 2-hydroxyphenyl, green, 217.5-18°; 2-carboxyphenyl and 4-chlorophenyl, garnet-red, 253°; 2-carboxyphenyl and 4-nitrophenyl, deep red, 258-9°; 2-carboxyphenyl and 4-sulfophenyl, deep red; 2-sulfophenyl and 4-sulfophenyl, red, 260° (crystd with 1 mole EtOH); 2-sulfophenyl and 4-nitrophenyl, deep red; 2-hydroxy-5-sulfonamidophenyl and 4-nitrophenyl, deep green, 277.5° (crystd. with 1 mole C₅H₅N). Oxidation of II (0.02 mole in soln. in AcOH-HCl) with Me₂CHCH₂CH₂ONO (0.04 mole in AcOH) in the cold gave colorless "o-S.C₆H₄.NMe:CC:N.NAr. NAr:N)++ (ClO₄-)₂" (IV). For IV prepd., Ar, % yield, and m.p. were: phenyl, 60, 265-70°; 4-methylphenyl, 65, 254-6°;

4-methoxyphenyl, 65, 246°; 4-chlorophenyl, 65, 270-2°.
 Reduction of IV by ascorbic acid or by alc. NaOH regenerated the II.
 Oxidation of the II by hot nitric acid gave the colorless
 tetrazolium derivs. $\text{ArN.N:C(CONMeC}_6\text{H}_4\text{SO}_4\text{--O).N:NAr}$. (V). For the V
 prepd., Ar, % yield, and m.p. were: Phenyl, 76, 230°;
 4-chlorophenyl, 60, 245°; 4-nitrophenyl, quant., 255°;
 4-sulfophenyl, could not be isolated; 4-methylphenyl, 50, could not
 be purified; 4-methoxyphenyl, could not be purified. The V on
 heating with alc. NaOH gave, after acidification, $\text{HO}_2\text{CC(:NNHAr)N:NAr}$
 (VI), when Ar was phenyl (m. 116°) or 4-chlorophenyl (m.
 204°); both VI were also prepd. by an established method for
 comparison. When Ar in V was 4-nitrophenyl, the VI did not result;
 the reduction product was probably $\text{O-HO}_3\text{SC}_6\text{H}_4\text{NMeCOC(:NNHAr)N:NAr}$
 (VII). V (Ar = 4-chlorophenyl) when reduced with ascorbic acid in
 EtOH-H₂O, gave a product which was probably the corresponding VII.
 This product, heated with alc. NaOH, gave the VI. V were obtained
 from oxidation of IV by hot nitric acid, although purification was
 then difficult.

IT 854100-88-2, Benzothiazolium, 3-methyl-2-(2-phenyl-2H-
 tetrazol-5-yl)-, perchlorate
 (quaternary compd. with PhClO_4)
 RN 854100-88-2 HCAPLUS
 CN Benzothiazolium, 3-methyl-2-(2-phenyl-2H-tetrazol-5-yl)-,
 perchlorate (5CI) (CA INDEX NAME)

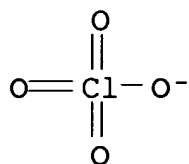
CM 1

CRN 854100-87-1
 CMF C15 H12 N5 S



CM 2

CRN 14797-73-0
 CMF Cl O4



IT 854387-87-4, Benzothiazolium, 2-[2-(p-chlorophenyl)-2H-tetrazol-5-yl]-3-methyl-, perchlorate

(quaternary compd. with p-chlorophenyl perchlorate)

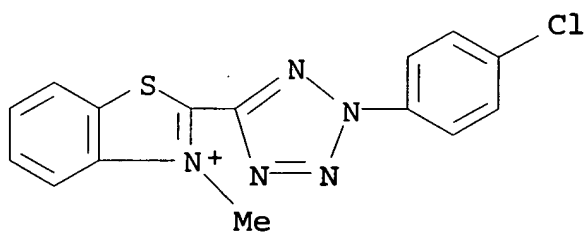
RN 854387-87-4 HCAPLUS

CN Benzothiazolium, 2-[2-(p-chlorophenyl)-2H-tetrazol-5-yl]-3-methyl-, perchlorate (5CI) (CA INDEX NAME)

CM 1

CRN 854387-86-3

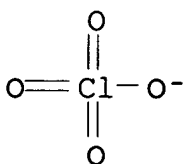
CMF C15 H11 Cl N5 S



CM 2

CRN 14797-73-0

CMF Cl O4



IT 854090-09-8, Benzothiazolium, 2-[2-(p-methoxyphenyl)-2H-

tetrazol-5-yl]-3-methyl-, perchlorate
(quaternary compd. with p-methoxyphenyl perchlorate)

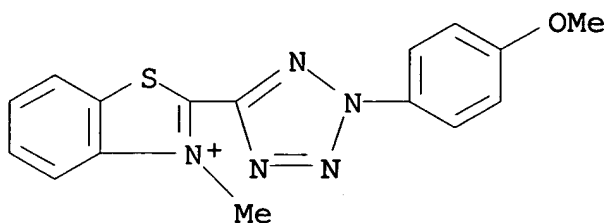
RN 854090-09-8 HCAPLUS

CN Benzothiazolium, 2-[2-(p-methoxyphenyl)-2H-tetrazol-5-yl]-3-methyl-,
perchlorate (5CI) (CA INDEX NAME)

CM 1

CRN 854090-08-7

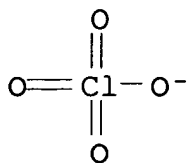
CMF C16 H14 N5 O S



CM 2

CRN 14797-73-0

CMF Cl O4



IT 854100-69-9, Benzothiazolium, 3-methyl-2-(2-p-tolyl-2H-tetrazol-5-yl)-, perchlorate

(quaternary compd. with p-tolylperchlorate)

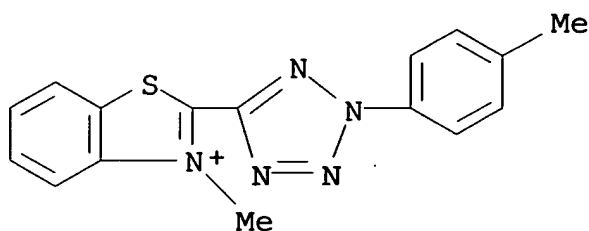
RN 854100-69-9 HCAPLUS

CN Benzothiazolium, 3-methyl-2-(2-p-tolyl-2H-tetrazol-5-yl)-,
perchlorate (5CI) (CA INDEX NAME)

CM 1

CRN 854100-68-8

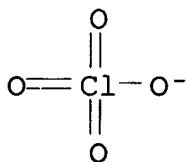
CMF C16 H14 N5 S



CM 2

CRN 14797-73-0

CMF Cl O4



CC 10 (Organic Chemistry)

IT 854100-88-2, Benzothiazolium, 3-methyl-2-(2-phenyl-2H-tetrazol-5-yl)-, perchlorate
(quaternary compd. with PhClO4)

IT 854387-87-4, Benzothiazolium, 2-[2-(p-chlorophenyl)-2H-tetrazol-5-yl]-3-methyl-, perchlorate
(quaternary compd. with p-chlorophenyl perchlorate)

IT 854090-09-8, Benzothiazolium, 2-[2-(p-methoxyphenyl)-2H-tetrazol-5-yl]-3-methyl-, perchlorate
(quaternary compd. with p-methoxyphenyl perchlorate)

IT 854100-69-9, Benzothiazolium, 3-methyl-2-(2-p-tolyl-2H-tetrazol-5-yl)-, perchlorate
(quaternary compd. with p-tolylperchlorate)

L39 ANSWER 23 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1956:89176 HCAPLUS

DOCUMENT NUMBER: 50:89176

ORIGINAL REFERENCE NO.: 50:16757c-f

TITLE: Syntheses of 5-(1,3-dimethyl-2-benzimidazolium)-

2,3-diaryltetrazolium salts

AUTHOR(S):

Wahl, Henri

SOURCE:

Compt. rend. (1955), 241, 1949-51

DOCUMENT TYPE:

Journal

LANGUAGE:

Unavailable

AB Oxidation of 2-di(phenylazo)methylene-1,3-dimethylbenzimidazoline (I) by a previous technique (C.A. 50, 10082a; preceding abstr.) gave 5-(1,3-dimethyl-2-benzimidazolium)-2,3-diphenyltetrazolium diperchlorate (II), C₂₂H₂₀N₆Cl₂O₈, nearly colorless octahedrons, m. 316-17°. The structure of II was proved by quant. reduction to I with ascorbic acid in neutral soln. II is also formed by HNO₃ oxidation at water-bath temp. The 2,3-di(p-chlorophenyl) analog (III) of II, m. 310°, was prepd. II and III are more stable in acid media than their S isologs (thiazolium compds.); they give an immediate red (in the case of II) or red-violet (III) color with alc. NaOH at room temp. When heated on a water-bath 1 hr. and acidified, II yielded PhN:NCH:NNHPh (IV), m. 117-18° (from MeOH), sol. in concd. H₂SO₄ with blue color, and in alc. NaOH with red color; HCl salt, m. 163°, hydrolyzed by H₂O. Evapn. of mother liquors from IV gave 1,3-dimethylbenzimidazolin-2-one (V), m. 113°. III gave di(p-chlorophenyl)formazan, m. 123-4°, and V under the same conditions. Since alc. NaOH does not react with I, the cleavage is specific for the salts. In contrast, the S isologs regenerate the initial dyes by the action of alk. The mechanism of the reaction is discussed.

IT 853793-88-1, Benzimidazolium, 1,3-dimethyl-2-(2-phenyl-2H-tetrazol-5-yl)-, perchlorate
(quaternary salt with PhClO₄)

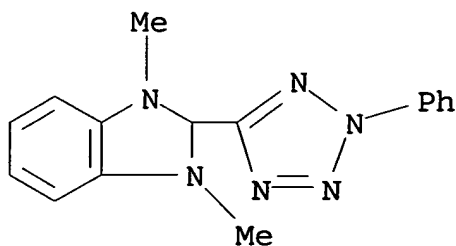
RN 853793-88-1 HCAPLUS

CN Benzimidazolium, 1,3-dimethyl-2-(2-phenyl-2H-tetrazol-5-yl)-, perchlorate (5CI) (CA INDEX NAME)

CM 1

CRN 853793-87-0

CMF C16 H15 N6

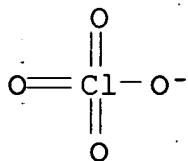


ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

CM 2

CRN 14797-73-0

CMF Cl O4



CC 10 (Organic Chemistry)

IT 853793-88-1, Benzimidazolium, 1,3-dimethyl-2-(2-phenyl-2H-tetrazol-5-yl)-, perchlorate
(quaternary salt with PhClO4)

L39 ANSWER 24 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1956:89175 HCAPLUS

DOCUMENT NUMBER: 50:89175

ORIGINAL REFERENCE NO.: 50:16756h-i,16757a-c

TITLE: Oxidation of 2-bis(aryldio)methylene-3-methylbenzothiazolines

AUTHOR(S): Wahl, Henri; Le Bris, Marie-Therese

SOURCE: Compt. rend. (1955), 241, 1585-7

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

GI For diagram(s), see printed CA Issue.

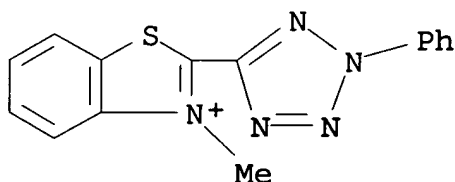
AB Oxidation of several 2-bis(aryldio)methylene-3-methylbenzothiazolines (I) with HNO₃, followed by treatment with NaOH, appears to proceed through an initial stabilization of the diazo groups as the tetrazole salt followed by cleavage of the C-S

bond, oxidation to o--O₃SC₆H₄NMeCOY [Y = (N: NR.NR.N:C)+ in this abstr.] and cleavage of the amide link. I (aryl = p-ClC₆H₄) (8.8 g.) was dissolved in 120 ml. AcOH, 8 ml. concd. HCl, and 25 ml. H₂O; during 2 hrs. at 15-18°, 8 ml. of a soln. of 1 mole iso-AmONO in 200 ml. AcOH was added. The initial red color became orange-brown in 6-48 hrs. A ppt. of (o-C₆H₄.NMe:CY.S)₂ClO₄ (II) formed on addn. of 120 ml. H₂O and 10 ml. HClO₄. The following II were prepd. (R, crystal form and solvent and m.p. given): Ph, plates from AcOH, 265-6°; p-MeC₆H₄, rods from AcOH, 254-6°; p-ClC₆H₄, plates from AcOH, 270-2°; p-MeOC₆H₄, yellow needles from AcOH, 246°. To test the theory that HNO₃ oxidizes I to II before cleavage, II was treated with HNO₃ and the internal tetrazolesulfonates were obtained. With slight changes in the procedure, colorless cryst. compds. have been obtained which prevent crystn. of the II salts. The former yield on reduction colored compds. different from I and by reaction with NaOH show the color of formazancarboxylic acids, indicating a cleavage of the mol., which is now being studied. Reduction of II with ascorbic acid in neutral soln. or treatment with alc. NaOH reforms I almost quantitatively.

IT 854100-88-2, Benzothiazolium, 3-methyl-2-(2-phenyl-2H-tetrazol-5-yl)-, perchlorate
(quaternary salt with PhClO₄)
RN 854100-88-2 HCAPLUS
CN Benzothiazolium, 3-methyl-2-(2-phenyl-2H-tetrazol-5-yl)-, perchlorate (5CI) (CA INDEX NAME)

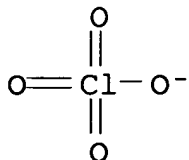
CM 1

CRN 854100-87-1
CMF C15 H12 N5 S



CM 2

CRN 14797-73-0
CMF Cl O4

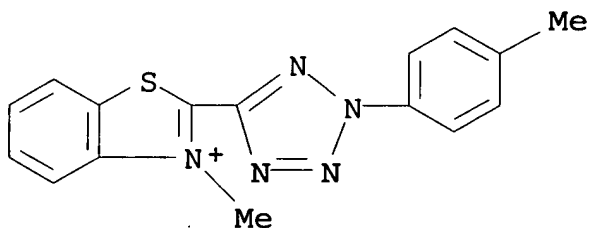


IT 854100-69-9, Benzothiazolium, 3-methyl-2-(2-p-tolyl-2H-tetrazol-5-yl)-, perchlorate
(quaternary salt with p-CH₃C₆H₄ClO₄)
RN 854100-69-9 HCAPLUS
CN Benzothiazolium, 3-methyl-2-(2-p-tolyl-2H-tetrazol-5-yl)-, perchlorate (5CI) (CA INDEX NAME)

CM 1

CRN 854100-68-8

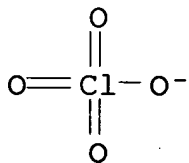
CMF C16 H14 N5 S



CM 2

CRN 14797-73-0

CMF Cl O4



IT 854387-87-4, Benzothiazolium, 2-[2-(p-chlorophenyl)-2H-tetrazol-5-yl]-3-methyl-, perchlorate
(quaternary salt with p-ClC₆H₄ClO₄)

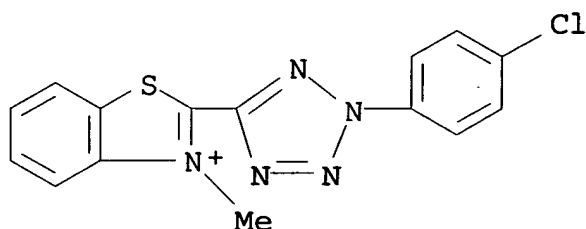
RN 854387-87-4 HCAPLUS

CN Benzothiazolium, 2-[2-(p-chlorophenyl)-2H-tetrazol-5-yl]-3-methyl-, perchlorate (5CI) (CA INDEX NAME)

CM 1

CRN 854387-86-3

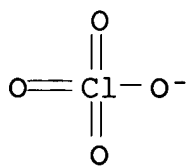
CMF C15 H11 Cl N5 S



CM 2

CRN 14797-73-0

CMF Cl O4



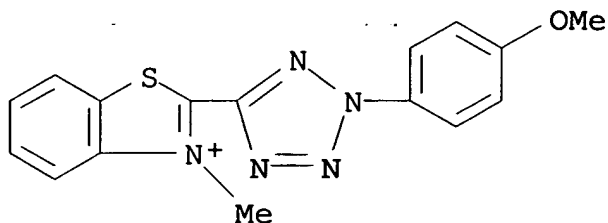
IT 854090-09-8, Benzothiazolium, 2-[2-(p-methoxyphenyl)-2H-tetrazol-5-yl]-3-methyl-, perchlorate
(quaternary salt with p-MeOC₆H₄ClO₄)

RN 854090-09-8 HCAPLUS

CN Benzothiazolium, 2-[2-(p-methoxyphenyl)-2H-tetrazol-5-yl]-3-methyl-, perchlorate (5CI) (CA INDEX NAME)

CM 1

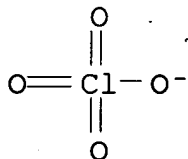
CRN 854090-08-7
CMF C16 H14 N5 O S



CM 2

CRN 14797-73-0
CMF Cl O4

20040139566



- CC 10 (Organic Chemistry)
IT 854100-88-2, Benzothiazolium, 3-methyl-2-(2-phenyl-2H-tetrazol-5-yl)-, perchlorate
(quaternary salt with PhClO4)
IT 854100-69-9, Benzothiazolium, 3-methyl-2-(2-p-tolyl-2H-tetrazol-5-yl)-, perchlorate
(quaternary salt with p-CH3C6H4ClO4)
IT 854387-87-4, Benzothiazolium, 2-[2-(p-chlorophenyl)-2H-tetrazol-5-yl]-3-methyl-, perchlorate
(quaternary salt with p-ClC6H4ClO4)
IT 854090-09-8, Benzothiazolium, 2-[2-(p-methoxyphenyl)-2H-tetrazol-5-yl]-3-methyl-, perchlorate
(quaternary salt with p-MeOC6H4ClO4)

=> d 140 ibib abs hitstr hitind 1-3 10-13 20-23 30-33 40-43 50-53

L40 ANSWER 1 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:822985 HCAPLUS
 DOCUMENT NUMBER: 141:337250
 TITLE: Composition for coloring for human
 keratinic substances containing a fluorescent
 dye and a particulate sequestering agent
 INVENTOR(S): Plos, Gregory; Gourlaouen, Luc
 PATENT ASSIGNEE(S): L'oreal, Fr.
 SOURCE: Fr. Demande, 35 pp.
 CODEN: FRXXBL
 DOCUMENT TYPE: Patent
 LANGUAGE: French
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2853231	A1	20041008	FR 2003-4024	20030401
WO 2004091556	A2	20041028	WO 2004-FR818	20040401
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WO 2004091556	A3	20050217		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2005098763	A1	20050512	US 2004-814585	20040401
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BR 2004005648	A	20050719	BR 2004-5648	20040401
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EP 1622580

A2

20060208

EP 2004-758927

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R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,
PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK

PRIORITY APPLN. INFO.:

FR 2003-4024

A

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US 2003-468081P

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WO 2004-FR818

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OTHER SOURCE(S): MARPAT 141:337250

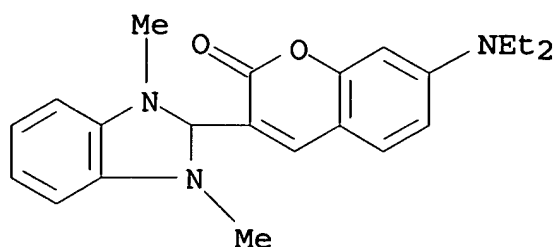
AB A compn. for **coloring** human hair comprises a fluorescent **dye** and a particulate sequestering agent. Thus, 2-picoline was reacted with 1,6-dibromohexane to obtain a ppt. which was sepd. and reacted with p-dimethylaminobenzaldehyde to to obtain 1,6-bis[(2-p-dimethylaminophenylethenyl)pyridinium]hexane polymer (I). A hair **dye** contained I 1, mucic acid 0.2, pH adjusting agent q.s., and water q.s. 100%.

IT 29556-33-0

RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)
(compn. for **coloring** for human keratinic substances
contg. fluorescent **dye** and particulate sequestering
agent)

RN 29556-33-0 HCAPLUS

CN 1H-Benzimidazolium, 2-[7-(diethylamino)-2-oxo-2H-1-benzopyran-3-yl]-
1,3-dimethyl-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

IC ICM A61K007-13

ICS A61K007-021

CC 62-3 (Essential Oils and Cosmetics)

Section cross-reference(s): 25

ST hair **color** particulate fluorescent **dye**
sequestering agent

IT Azo **dyes**

Sequestering agents

(compn. for **coloring** for human keratinic substances
contg. fluorescent **dye** and particulate sequestering
agent)

IT Hair preparations

(**dyes**; compn. for **coloring** for human
keratinic substances contg. fluorescent **dye** and
particulate sequestering agent)

IT Carboxylic acids, biological studies

RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)
(hydroxy; compn. for **coloring** for human keratinic
substances contg. fluorescent **dye** and particulate
sequestering agent)

IT Carboxylic acids, biological studies

RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)
(polycarboxylic; compn. for **coloring** for human
keratinic substances contg. fluorescent **dye** and
particulate sequestering agent)

IT 81-83-4D, Naphthalimide, derivs. 526-99-8, Mucic acid

1199-01-5D, Azlactone, derivs. 2465-27-2D, derivs.

29556-33-0 148124-42-9

RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)

(compn. for **coloring** for human keratinic substances
contg. fluorescent **dye** and particulate sequestering
agent)

IT 139537-27-2P

RL: COS (Cosmetic use); SPN (Synthetic preparation); BIOL
(Biological study); PREP (Preparation); USES (Uses)
(compn. for **coloring** for human keratinic substances
contg. fluorescent **dye** and particulate sequestering
agent)

IT 100-10-7, p-Dimethylaminobenzaldehyde 109-06-8, 2-Picoline
629-03-8, 1,6-Dibromohexane

RL: RCT (Reactant); RACT (Reactant or reagent)
(compn. for **coloring** for human keratinic substances
contg. fluorescent **dye** and particulate sequestering
agent)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR
THIS RECORD. ALL CITATIONS AVAILABLE IN
THE RE FORMAT

L40 ANSWER 2 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:822840 HCAPLUS

DOCUMENT NUMBER: 141:319508

TITLE: Composition for **dyeing** human keratinic
fibers comprising a fluorescent **coloring**
agent and an insoluble conditioning agent

INVENTOR(S): Plos, Gregory; Samain, Henri

PATENT ASSIGNEE(S): L'oreal, Fr.

SOURCE: Eur. Pat. Appl., 25 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: French

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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EP 1464328	A1	20041006	EP 2004-290871	200404 01

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R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,
PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU,
PL, SK, HR

FR 2853228	A1	20041008	FR 2003-4021
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JP 2004307503 A2 20041104 JP 2004-109536

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BR 2004001181 A 20050118 BR 2004-1181

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US 2005076457 A1 20050414 US 2004-814337

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PRIORITY APPLN. INFO.:

FR 2003-4021

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US 2003-468063P

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OTHER SOURCE(S): MARPAT 141:319508

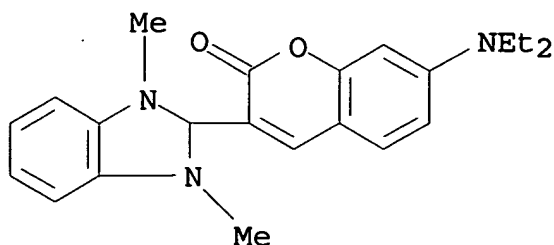
AB Hair **dye** prepns. comprising a fluorescent **dye** and a particulate insol. conditioning agent are disclosed. Thus, 1,6-dibromohexane was reacted with 2-picoline to obtain a ppt. which was sepd. and reacted with p-dimethylaminobenzaldehyde to obtain 1,6-bis[(2-p-dimethylaminophenylethenyl)pyridinium]hexane deriv. (I). A hair **dye** compn. contained I 0.6, Arlamol HD 0.25, sodium lauryl ether sulfate 10, and water q.s. 100%.

IT 29556-33-0

RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)
(compn. for **dyeing** human keratinic fibers comprising fluorescent **coloring** agent and insol. conditioning agent)

RN 29556-33-0 HCAPLUS

CN 1H-Benzimidazolium, 2-[7-(diethylamino)-2-oxo-2H-1-benzopyran-3-yl]-1,3-dimethyl-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

IC ICM A61K007-13
ICS A61K007-48

CC 62-3 (Essential Oils and Cosmetics)
Section cross-reference(s): 25

ST hair **dye** keratinic fiber fluorescence **coloring**
agent conditioner

IT Fats and Glyceridic oils, biological studies
RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)
(animal; compn. for **dyeing** human keratinic fibers
comprising fluorescent **coloring** agent and insol.
conditioning agent)

IT Lactones
RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)
(aza; compn. for **dyeing** human keratinic fibers
comprising fluorescent **coloring** agent and insol.
conditioning agent)

IT **Dyes**
(azomethine; compn. for **dyeing** human keratinic fibers
comprising fluorescent **coloring** agent and insol.
conditioning agent)

IT Azo **dyes**
Cyanine **dyes**
(compn. for **dyeing** human keratinic fibers comprising
fluorescent **coloring** agent and insol. conditioning
agent)

IT Paraffin oils
Waxes
RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)
(compn. for **dyeing** human keratinic fibers comprising

- fluorescent **coloring** agent and insol. conditioning agent)
- IT Hair preparations
(conditioners; compn. for **dyeing** human keratinic fibers comprising fluorescent **coloring** agent and insol. conditioning agent)
- IT Hair preparations
(**dyes**; compn. for **dyeing** human keratinic fibers comprising fluorescent **coloring** agent and insol. conditioning agent)
- IT Carboxylic acids, biological studies
RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)
(esters; compn. for **dyeing** human keratinic fibers comprising fluorescent **coloring** agent and insol. conditioning agent)
- IT Lactams
RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)
(naphtho; compn. for **dyeing** human keratinic fibers comprising fluorescent **coloring** agent and insol. conditioning agent)
- IT **Dyes**
(oxazines and thiazines; compn. for **dyeing** human keratinic fibers comprising fluorescent **coloring** agent and insol. conditioning agent)
- IT Fats and Glyceridic oils, biological studies
RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)
(vegetable; compn. for **dyeing** human keratinic fibers comprising fluorescent **coloring** agent and insol. conditioning agent)
- IT 81-83-4D, Naphthalimide, derivs. 91-64-5D, Coumarin, derivs.
92-83-1D, Xanthene, aza derivs. 110-27-0, Isopropyl myristate
255-58-3D, 2H-Quinolizine, xanthenodi derivs. 2465-27-2
29556-33-0 109485-61-2, Arlamol HD
RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)
(compn. for **dyeing** human keratinic fibers comprising fluorescent **coloring** agent and insol. conditioning agent)
- IT 139537-27-2P
RL: COS (Cosmetic use); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(compn. for **dyeing** human keratinic fibers comprising fluorescent **coloring** agent and insol. conditioning agent)
- IT 100-10-7, p-Dimethylaminobenzaldehyde. 109-06-8, 2 Picoline
629-03-8, 1,6-Dibromohexane

RL: RCT (Reactant); RACT (Reactant or reagent)
 (compn. for **dyeing** human keratinic fibers comprising
 fluorescent **coloring** agent and insol. conditioning
 agent)

L40 ANSWER 3 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 2004:822839 HCAPLUS
 DOCUMENT NUMBER: 141:319507
 TITLE: Composition for **dyeing** human keratinic
 fibers comprising a fluorescent **dye**
 and a polyol
 INVENTOR(S): Plos, Gregory; Gourlaouen, Luc
 PATENT ASSIGNEE(S): L'oreal, Fr.
 SOURCE: Eur. Pat. Appl., 27 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: French
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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EP 1464327	A1	20041006	EP 2004-290870	200404 01
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R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR				
FR 2853236	A1	20041008	FR 2003-4030	200304 01
JP 2004315522	A2	20041111	JP 2004-108982	200404 01
<--				
US 2005008594	A1	20050113	US 2004-814300	200404 01
<--				
BR 2004001182	A	20050118	BR 2004-1182	200404 01
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PRIORITY APPLN. INFO.:

FR 2003-4030

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US 2003-468086P

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OTHER SOURCE(S): MARPAT 141:319507

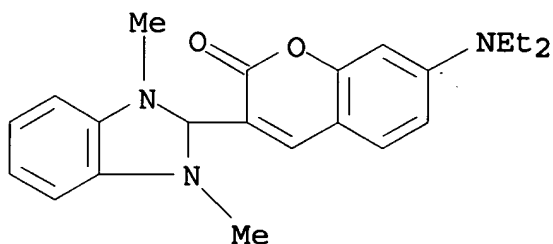
AB Hair **dye** prepns. comprising a fluorescent **dye** and a particulate polyol are disclosed. Thus, 1,6-dibromohexane was reacted with 2-picoline to obtain a ppt. which was sepd. and reacted with p-dimethylaminobenzaldehyde to obtain 1,6-bis[(2-p-dimethylaminophenylethenyl)pyridinium]hexane derivs. (I). A hair **dye** compn. contained I 1, hexylene glycol and water q.s. 100%.

IT 29556-33-0

RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)
(compn. for **dyeing** human keratinic fibers comprising fluorescent **dye** and polyol)

RN 29556-33-0 HCAPLUS

CN 1H-Benzimidazolium, 2-[7-(diethylamino)-2-oxo-2H-1-benzopyran-3-yl]-1,3-dimethyl-, chloride (9CI) (CA INDEX NAME)

● Cl⁻

ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

IC ICM A61K007-13

CC 62-3 (Essential Oils and Cosmetics)

Section cross-reference(s): 25

ST hair **dye** keratinic fiber fluorescence **dye** polyol
hexylene glycol

- IT Lactones
RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)
(aza; compn. for **dyeing** human keratinic fibers
comprising fluorescent **dye** and polyol)
- IT **Dyes**
(azomethine; compn. for **dyeing** human keratinic fibers
comprising fluorescent **dye** and polyol)
- IT Azo **dyes**
Cyanine **dyes**
(compn. for **dyeing** human keratinic fibers comprising
fluorescent **dye** and polyol)
- IT Hair preparations
(**dyes**; compn. for **dyeing** human keratinic
fibers comprising fluorescent **dye** and polyol)
- IT Lactams
RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)
(naphtho; compn. for **dyeing** human keratinic fibers
comprising fluorescent **dye** and polyol)
- IT **Dyes**
(oxazines and thiazines; compn. for **dyeing** human
keratinic fibers comprising fluorescent **dye** and polyol)
- IT 81-83-4D, Naphthalimide, derivs. 91-64-5D, Coumarin, derivs.
92-83-1D, Xanthene, aza derivs. 110-63-4, 1,4-Butanediol,
biological studies 111-29-5, 1,5-Pentanediol 126-30-7,
Neopentylglycol 255-58-3D, 2H-Quinolizine, xanthenodi derivs.
629-11-8, 1,6-Hexanediol 2163-42-0, 2-Methyl-1,3-propanediol
2465-27-2 2568-33-4, Isopreneglycol 3068-00-6, 1,2,4-Butanetriol
4457-71-0, 3-Methyl-1,5-pentanediol 7564-64-9,
3-Methyl-1,3,5-pentanetriol 29556-33-0 81554-20-3,
2,3-Dimethyl-1,5-pentanediol
RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)
(compn. for **dyeing** human keratinic fibers comprising
fluorescent **dye** and polyol)
- IT 139537-27-2P
RL: COS (Cosmetic use); SPN (Synthetic preparation); BIOL
(Biological study); PREP (Preparation); USES (Uses)
(compn. for **dyeing** human keratinic fibers comprising
fluorescent **dye** and polyol)
- IT 100-10-7, p-Dimethylaminobenzaldehyde. 107-41-5, Hexylene glycol
109-06-8, 2 Picoline 629-03-8, 1,6-Dibromohexane
RL: RCT (Reactant); RACT (Reactant or reagent)
(compn. for **dyeing** human keratinic fibers comprising
fluorescent **dye** and polyol)

L40 ANSWER 10 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:822832 HCAPLUS
 DOCUMENT NUMBER: 141:319500
 TITLE: Brightening compositions comprising a
 fluorescent dye and a polymer
 thickener for human keratinic matter
 INVENTOR(S): Plos, Gregory; Gourlaouen, Luc
 PATENT ASSIGNEE(S): L'oreal, Fr.
 SOURCE: Eur. Pat. Appl., 27 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: French
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1464320	A1	20041006	EP 2004-290862	20040401
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FR 2853234	A1	20041008	FR 2003-4028	20030401
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JP 2004307495	A2	20041104	JP 2004-108821	20040401
<--				
US 2005008593	A1	20050113	US 2004-814236	20040401
<--				
BR 2004001189	A	20050125	BR 2004-1189	20040401
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PRIORITY APPLN. INFO.:			FR 2003-4028	A
				20030401
			US 2003-468108P	P
				200305

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OTHER SOURCE(S): MARPAT 141:319500

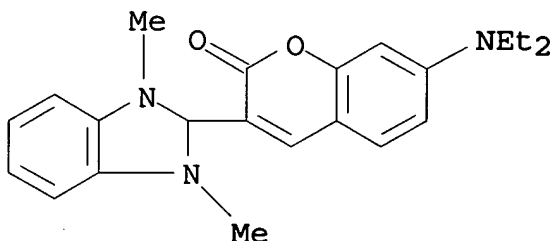
AB Brightening compns. comprising a fluorescent dye and a polymer thickener for human keratinic matter are disclosed. Thus, 1,6-dibromohexane was reacted with 2-picoline to obtain a ppt. which was sepd. and reacted with p-dimethylaminobenzaldehyde to obtain 1,6-bis[(2-p-dimethylaminophenylethenyl)pyridinium]hexane polymer (I). A hair brightening compn. contained I 0.6, Jaguar HP60 0.5, sodium N-cocoylamindoethyl N-ethoxycarboxymethyl glycinate 2, hexylene glycol 7, and water q.s. 100%.

IT 29556-33-0

RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)
(brightening compns. comprising fluorescent dye and polymer thickener for human keratinic matter)

RN 29556-33-0 HCAPLUS

CN 1H-Benzimidazolium, 2-[7-(diethylamino)-2-oxo-2H-1-benzopyran-3-yl]-1,3-dimethyl-, chloride (9CI) (CA INDEX NAME)

● Cl⁻

ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

IC ICM A61K007-13

ICS A61K007-135; A61K007-48

CC 62-3 (Essential Oils and Cosmetics)

Section cross-reference(s): 25

ST hair brightener fluorescent dye polymer thickener

IT Brightening

(agents, hair; brightening compns. comprising fluorescent dye and polymer thickener for human keratinic matter)

IT Lactones

RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)

- (aza; brightening compns. comprising fluorescent **dye** and polymer thickener for human keratinic matter)
- IT **Dyes**
(azomethine; brightening compns. comprising fluorescent **dye** and polymer thickener for human keratinic matter)
- IT **Azo dyes**
Cyanine dyes
Hair preparations
Thickening agents
(brightening compns. comprising fluorescent **dye** and polymer thickener for human keratinic matter)
- IT Acrylic polymers, biological studies
Polymers, biological studies
Polysaccharides, biological studies
RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)
(brightening compns. comprising fluorescent **dye** and polymer thickener for human keratinic matter)
- IT Lactams
RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)
(naphtho; brightening compns. comprising fluorescent **dye** and polymer thickener for human keratinic matter)
- IT **Dyes**
(oxazines and thiazines; brightening compns. comprising fluorescent **dye** and polymer thickener for human keratinic matter)
- IT 255-58-3D, 2H-Quinolizine, derivs.
RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)
(Xanthenodi; brightening compns. comprising fluorescent **dye** and polymer thickener for human keratinic matter)
- IT 81-83-4D, Naphthalimide, derivs. 91-64-5D, Coumarin, derivs.
92-83-1D, Xanthene, aza derivs. 2465-27-2 9000-01-5, Gum arabic
9000-28-6, Gum ghatti 9000-30-0, Guar gum 9000-36-6, Karaya gum
9000-65-1, Tragacanth gum 9000-69-5, Pectin 9004-32-4, Blanoose
931M 9004-64-2, Hydroxypropyl cellulose 9005-32-7, Alginic acid
11138-66-2, Keltrol t 26100-47-0, Acrylamide ammonium acrylate
copolymer 28214-57-5, Polyammonium acrylate 29556-33-0
35429-19-7 39421-75-5, Jaguar HP60 39464-87-4, Scleroglucan
40623-73-2
RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)
(brightening compns. comprising fluorescent **dye** and polymer thickener for human keratinic matter)
- IT 139537-27-2P
RL: COS (Cosmetic use); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(brightening compns. comprising fluorescent **dye** and

polymer thickener for human keratinic matter)
 IT 100-10-7 109-06-8, 2-Picoline 629-03-8, 1,6-Dibromohexane
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (brightening compns. comprising fluorescent dye and
 polymer thickener for human keratinic matter)
 IT 9003-01-4, Polyacrylic acid
 RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)
 (crosslinked; brightening compns. comprising fluorescent
 dye and polymer thickener for human keratinic matter)

L40 ANSWER 11 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 2004:822831 HCAPLUS
 DOCUMENT NUMBER: 141:319499
 TITLE: Hair dye preparation comprising a
 fluorescent dye and cationic polymer
 INVENTOR(S): Plos, Gregory; Samain, Henri
 PATENT ASSIGNEE(S): L'oreal, Fr.
 SOURCE: Eur. Pat. Appl., 31 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: French
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1464319	A1	20041006	EP 2004-290860	20040401
<--				
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR				
FR 2853232	A1	20041008	FR 2003-4026	20030401
FR 2853232	B1	20050617		
JP 2004307494	A2	20041104	JP 2004-108820	20040401
<--				
US 2004258641	A1	20041223	US 2004-814335	20040401

BR 2004001185

A

20050118

<--
BR 2004-1185200404
01

PRIORITY APPLN. INFO.:

<--
FR 2003-4026

A

200304
01<--
US 2003-467548P

P

200305
05

OTHER SOURCE(S): MARPAT 141:319499

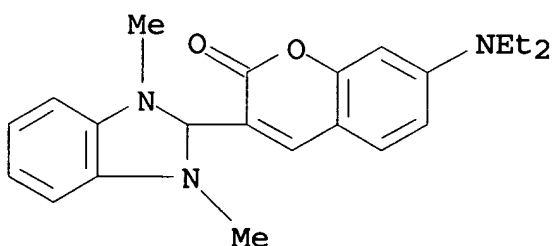
AB Hair **dye** prepn. comprising a particulate fluorescent **dye** and a cationic polymer are disclosed. Thus, 1,6-dibromohexane was reacted with 2-picoline to obtain a ppt. which was sepd. and reacted with p-dimethylaminobenzaldehyde to obtain 1,6-bis[(2-p-dimethylaminophenylethenyl)pyridinium]hexane polymer (I). A hair **dye** compn. contained I 1, Merquat-100 1, and water q.s. 100%.

IT 29556-33-0

RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)
(hair **dye** prepn. comprising fluorescent **dye**
and cationic polymer)

RN 29556-33-0 HCAPLUS

CN 1H-Benzimidazolium, 2-[7-(diethylamino)-2-oxo-2H-1-benzopyran-3-yl]-
1,3-dimethyl-, chloride (9CI) (CA INDEX NAME)

● Cl⁻

ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

IC ICM A61K007-11
CC 62-3 (Essential Oils and Cosmetics)
Section cross-reference(s): 25
ST hair **dye** prepn fluorescent compd cationic polymer
IT Polyamides, biological studies
RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)
(amino-contg.; hair **dye** prepn. comprising fluorescent
dye and cationic polymer)
IT Lactones
RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)
(aza; hair **dye** prepn. comprising fluorescent
dye and cationic polymer)
IT **Dyes**
(azomethine; hair **dye** prepn. comprising fluorescent
dye and cationic polymer)
IT Polyelectrolytes
(cationic; hair **dye** prepn. comprising fluorescent
dye and cationic polymer)
IT Polysaccharides, biological studies
RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)
(cationic; hair **dye** prepn. comprising fluorescent
dye and cationic polymer)
IT Hair preparations
(**dyes**; hair **dye** prepn. comprising fluorescent
dye and cationic polymer)
IT Azo **dyes**
Cyanine **dyes**
Hair preparations
(hair **dye** prepn. comprising fluorescent **dye**
and cationic polymer)
IT Acrylic polymers, biological studies
Polymers, biological studies
RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)
(hair **dye** prepn. comprising fluorescent **dye**
and cationic polymer)
IT Lactams
RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)
(naphtho; hair **dye** prepn. comprising fluorescent
dye and cationic polymer)
IT **Dyes**
(oxazines and thiazines; hair **dye** prepn. comprising
fluorescent **dye** and cationic polymer)
IT Quaternary ammonium compounds, biological studies
RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)
(polymers; hair **dye** prepn. comprising fluorescent

dye and cationic polymer)

IT 81-83-4D, Naphthalimide, derivs. 91-64-5D, Coumarin, derivs.
92-83-1D, Xanthene, aza derivs. 255-58-3D, 2H-Quinolizine,
xanthenodi derivs. 2465-27-2 9004-34-6D, Cellulose, derivs.
26062-79-3, Merquat-100 26161-33-1, Salcare SC95
29556-33-0
RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)
(hair **dye** prepn. comprising fluorescent **dye**
and cationic polymer)

IT 139537-27-2P
RL: COS (Cosmetic use); SPN (Synthetic preparation); BIOL
(Biological study); PREP (Preparation); USES (Uses)
(hair **dye** prepn. comprising fluorescent **dye**
and cationic polymer)

IT 100-10-7, p-Dimethylaminobenzaldehyde. 109-06-8, 2 Picoline
629-03-8, 1,6-Dibromohexane
RL: RCT (Reactant); RACT (Reactant or reagent)
(hair **dye** prepn. comprising fluorescent **dye**
and cationic polymer)

L40 ANSWER 12 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:822830 HCAPLUS
DOCUMENT NUMBER: 141:319498
TITLE: Process for **dyeing** human keratinic
fibers with a brightening effect, wherein the
fibers had undergone a permanent wave treatment
and wherein a composition comprising a
fluorescent **dye** is applied
INVENTOR(S): Plos, Gregory; Samain, Henri
PATENT ASSIGNEE(S): L'oreal, Fr.
SOURCE: Eur. Pat. Appl., 21 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	
EP 1464318	A1	20041006	EP 2004-290866	200404 01

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R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,

PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU,
PL, SK, HR

FR 2853237	A1	20041008	FR 2003-4031	200304 01
JP 2004307498	A2	20041104	JP 2004-108897	200404 01
US 2005005368	A1	20050113	<-- US 2004-814333	200404 01
BR 2004001191	A	20050118	<-- BR 2004-1191	200404 01
PRIORITY APPLN. INFO.:			<-- FR 2003-4031	A 200304 01
			<-- US 2003-468104P	P 200305 06
			<--	

OTHER SOURCE(S): MARPAT 141:319498

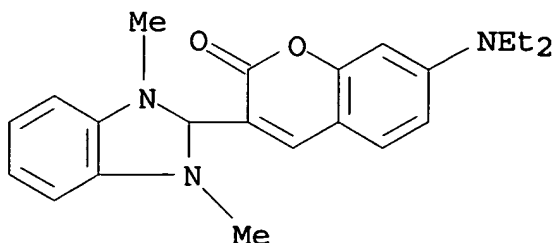
AB Process for **dyeing** human keratinic fibers with a brightening effect, wherein the fibers had undergone a permanent wave treatment and wherein a compn. comprising a fluorescent **dye** is applied is disclosed. Thus, 1,6-dibromohexane was reacted with 2-picoline to obtain a ppt. which was sepd. and reacted with p-dimethylaminobenzaldehyde to obtain 1,6-bis[(2-p-dimethylaminophenylethenyl)pyridinium]hexane deriv. (I). A hair **dye** compn. contained I 0.6, sodium N-cocoyl amidoethyl N-ethoxycarboxymethyl glycinate 2, hexylene glycol 7, and water q.s. 100%.

IT 29556-33-0

RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)
(process for **dyeing** human keratinic fibers with brightening effect, wherein fibers had undergone permanent wave treatment and wherein compn. comprising fluorescent **dye** is applied)

RN 29556-33-0 HCAPLUS

CN 1H-Benzimidazolium, 2-[7-(diethylamino)-2-oxo-2H-1-benzopyran-3-yl]-1,3-dimethyl-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

IC ICM A61K007-09

ICS A61K007-13

CC 62-3 (Essential Oils and Cosmetics)

Section cross-reference(s): 25

ST hair **dye** keratinic fiber fluorescent **dye**
brightener permanent wave

IT Lactones

RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)

(aza; process for **dyeing** human keratinic fibers with
brightening effect, wherein fibers had undergone permanent wave
treatment and wherein compn. comprising fluorescent **dye**
is applied)

IT **Dyes**

(azomethine; process for **dyeing** human keratinic fibers
with brightening effect, wherein fibers had undergone permanent
wave treatment and wherein compn. comprising fluorescent
dye is applied)

IT Hair preparations

(**dyes**; process for **dyeing** human keratinic
fibers with brightening effect, wherein fibers had undergone
permanent wave treatment and wherein compn. comprising
fluorescent **dye** is applied)

IT Lactams

RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)

(naphtho; process for **dyeing** human keratinic fibers
with brightening effect, wherein fibers had undergone permanent
wave treatment and wherein compn. comprising fluorescent
dye is applied)

- IT **Dyes**
(oxazines and thiazines; process for **dyeing** human keratinic fibers with brightening effect, wherein fibers had undergone permanent wave treatment and wherein compn. comprising fluorescent **dye** is applied)
- IT Hair preparations
(permanent wave; process for **dyeing** human keratinic fibers with brightening effect, wherein fibers had undergone permanent wave treatment and wherein compn. comprising fluorescent **dye** is applied)
- IT **Azo dyes**
Cyanine dyes
(process for **dyeing** human keratinic fibers with brightening effect, wherein fibers had undergone permanent wave treatment and wherein compn. comprising fluorescent **dye** is applied)
- IT 81-83-4D, Naphthalimide, derivs. 91-64-5D, Coumarin, derivs. 92-83-1D, Xanthene, aza derivs. 255-58-3D, 2H-Quinolizine, xanthenodi derivs. 2465-27-2 29556-33-0 768360-63-0D, cocoyl derivs..
RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)
(process for **dyeing** human keratinic fibers with brightening effect, wherein fibers had undergone permanent wave treatment and wherein compn. comprising fluorescent **dye** is applied)
- IT 139537-27-2P
RL: COS (Cosmetic use); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(process for **dyeing** human keratinic fibers with brightening effect, wherein fibers had undergone permanent wave treatment and wherein compn. comprising fluorescent **dye** is applied)
- IT 100-10-7, p-Dimethylaminobenzaldehyde. 109-06-8, 2 Picoline 629-03-8, 1,6-Dibromohexane
RL: RCT (Reactant); RACT (Reactant or reagent)
(process for **dyeing** human keratinic fibers with brightening effect, wherein fibers had undergone permanent wave treatment and wherein compn. comprising fluorescent **dye** is applied)

L40 ANSWER 13 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:37066 HCAPLUS

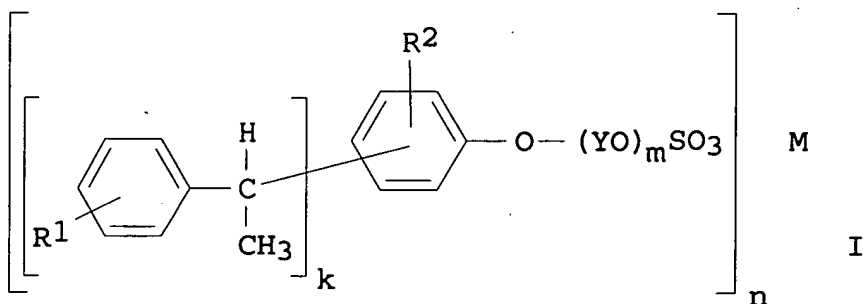
DOCUMENT NUMBER: 140:95724

TITLE: **Dyed** emulsion compositions and storage-stable water-thinned inks with good

water and light resistance
 INVENTOR(S): Kurita, Hideki; Ide, Hiromitsu; Tsuruta,
 Yoshitaka; Sato, Toshimasa
 PATENT ASSIGNEE(S): Toa Gosei Chemical Industry Co., Ltd., Japan;
 Nippon Keiko Kagaku K. K.
 SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004010846	A2	20040115	JP 2002-169594	200206 11
PRIORITY APPLN. INFO.:				200206 11

GI



AB The invention relates to compns. that comprise **dyes** and polymers manufd. by emulsion-polyimg. (A) vinyl monomers having cyano groups, (B) vinyl monomers having acidic functional groups, and (C) other vinyl monomers in the presence of anionic surfactants I (R1 = H, Me; R2 = C1-4-alkyl; Y = C2-4-alkylene; M = mono- or di-valent cation; k = 1-3; m = 1-100; n = 1, 2), useful for pens, jet printing, etc. Thus, acrylonitrile, methacrylic acid, and styrene

were polymd. in the presence of I (R1 = H; R2 = Me; Y = ethylene; k = 2; m = 8; n = 1; M = NH4+) and mixed with a dye (Maxilon Brilliant Flavin 10GFF) to give a yellow emulsion showing no change in viscosity after 90 days of storage.

IT 53350-83-7, Maxilon Brilliant Flavine 10GFF

RL: TEM (Technical or engineered material use); USES (Uses)
(dyed emulsion compns. for storage-stable aq. inks with good water and light resistance)

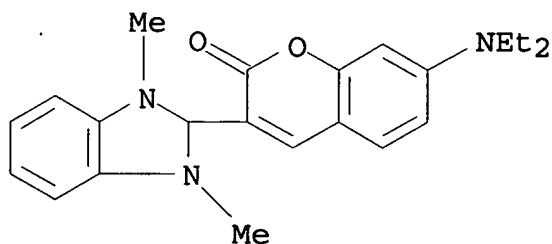
RN 53350-83-7 HCAPLUS

CN 1H-Benzimidazolium, 2-[7-(diethylamino)-2-oxo-2H-1-benzopyran-3-yl]-1,3-dimethyl-, trichlorozincate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 50566-16-0

CMF C22 H24 N3 O2



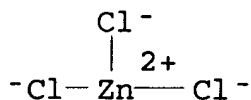
ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

CM 2

CRN 23603-98-7

CMF Cl3 Zn

CCI CCS



IC ICM C08L033-20

ICS C08F002-26; C08F212-08; C08F220-00; C09D011-00

CC 42-12 (Coatings, Inks, and Related Products)

ST color emulsion storage stability aq ink; phenylethylphenyl

oxyethylene sulfate anionic surfactant ink

IT Surfactants
(anionic; **dyed** emulsion compns. for storage-stable aq. inks with good water and light resistance)

IT Emulsions
(**dyed** emulsion compns. for storage-stable aq. inks with good water and light resistance)

IT Light-resistant materials
Water-resistant materials
(inks; **dyed** emulsion compns. for storage-stable aq. inks with good water and light resistance)

IT Inks
(jet-printing, anticlogging, storage-stable; **dyed** emulsion compns. for storage-stable aq. inks with good water and light resistance)

IT Inks
(light-resistant; **dyed** emulsion compns. for storage-stable aq. inks with good water and light resistance)

IT Inks
(water-resistant; **dyed** emulsion compns. for storage-stable aq. inks with good water and light resistance)

IT Inks
(water-thinned; **dyed** emulsion compns. for storage-stable aq. inks with good water and light resistance)

IT 27341-67-9P, Acrylonitrile-methacrylic acid-styrene copolymer
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**dyed** emulsion compns. for storage-stable aq. inks with good water and light resistance)

IT 81-88-9, Rhodamine B 3068-39-1, Rhodamine F 4G 53350-83-7
, Maxilon Brilliant Flavine 10GFF
RL: TEM (Technical or engineered material use); USES (Uses)
(**dyed** emulsion compns. for storage-stable aq. inks with good water and light resistance)

IT 179268-78-1
RL: TEM (Technical or engineered material use); USES (Uses)
(surfactant; **dyed** emulsion compns. for storage-stable aq. inks with good water and light resistance)

L40 ANSWER 20 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1997:787926 HCAPLUS

DOCUMENT NUMBER: 128:89989

TITLE: **Dyeing** or printing cellulose fibers
with cationic **dyes**

INVENTOR(S): Moriwaki, Toshikazu; Harada, Naoki; Tsukise,

PATENT ASSIGNEE(S): Bunji; Ueda, Yasuyoshi
 SOURCE: Sumitomo Chemical Co., Ltd., Japan
 Jpn. Kokai Tokkyo Koho, 17 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09316785	A2	19971209	JP 1996-134900	19960529

PRIORITY APPLN. INFO.: JP 1996-134900
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 19960529

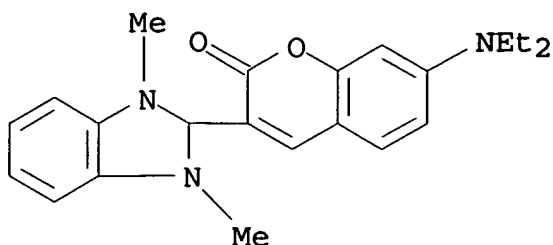
OTHER SOURCE(S): MARPAT 128:89989

AB The title process involves pretreatment of the fibers with compds. having water-sol. groups and reactive groups bonding with the fiber. A cotton knit was treated with 2-(4-sulfoanilino)-4-[4-(2-sulfatoethylsulfonyl)anilino]-6-chloro-s-triazine then **dyed** with 2-[4-[N-(2-cyanoethyl)-N-methylamino]styryl]-5-chloro-1,3,3-trimethylindolenium chloride, with a bright fluorescent red shade with high **color d.**

IT 29556-33-0
 RL: TEM (Technical or engineered material use); USES (Uses)
 (dyeing or printing cellulose fibers with cationic dyes)

RN 29556-33-0 HCAPLUS

CN 1H-Benzimidazolium, 2-[7-(diethylamino)-2-oxo-2H-1-benzopyran-3-yl]-1,3-dimethyl-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

IC ICM D06P003-60

ICS D06M013-358; D06P005-00

CC 40-6 (Textiles and Fibers)

Section cross-reference(s): 41

ST cotton fabric **dyeing** cationic **dye**

IT **Dyes**

(cationic; **dyeing** or printing cellulose fibers with cationic **dyes**)

IT Textiles

(cotton; **dyeing** or printing cellulose fibers with cationic **dyes**)

IT **Dyeing**

Textile printing

(**dyeing** or printing cellulose fibers with cationic **dyes**)

IT 14121-39-2 26110-34-9 26169-41-5 34815-22-0 41485-06-7

50570-59-7 56682-91-8 63240-33-5 87945-24-2 88466-02-8

90877-08-0 194366-81-9 194366-82-0 194366-83-1 194366-84-2

194366-85-3 194366-86-4 194366-87-5 194366-88-6 194366-89-7

194366-90-0 194366-91-1 194366-93-3 194366-94-4 194366-95-5

194366-96-6 194366-98-8 194366-99-9 194367-00-5 194367-01-6

200888-17-1 200888-18-2 200888-19-3 200888-20-6

RL: NUU (Other use, unclassified); USES (Uses)

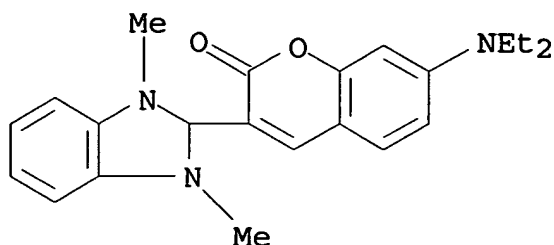
(**dyeing** or printing cellulose fibers with cationic **dyes**)

IT 81-88-9, Rhodamine B 13457-45-9 27564-02-9 **29556-33-0**

RL: TEM (Technical or engineered material use); USES (Uses)

(**dyeing** or printing cellulose fibers with cationic **dyes**)

L40 ANSWER 21 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:628421 HCAPLUS
DOCUMENT NUMBER: 127:312616
TITLE: Microwave-assisted crystallization inclusion of
coumarin and azo **dyes** in AlPO4-5
molecular sieves
AUTHOR(S): Braun, Ingo; Schulz-Ekloff, Gunter; Bockstette,
Marcus; Wohrle, Dieter
CORPORATE SOURCE: Institut fur Angewandte und Physikalische
Chemie, Universitat Bremen, Bremen, D-28334,
Germany
SOURCE: Zeolites (1997), 19(2/3), 128-132
CODEN: ZEOLD3; ISSN: 0144-2449
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Hydrothermally unstable **chromophores**, like the azo
dyes Basic Blue 159 and Basic Red 18:1 or the coumarin
dye Basic Yellow 40, are monomolecularly encapsulated in a
AlPO4-5 mol. sieve by microwave-assisted crystn. inclusion. The
incorporation of the labile mols. without degrdn. is attributed to
the drastic decrease of the crystn. time by 1 order of magnitude.
The encapsulated **dyes** exhibit inhomogeneous broadening of
the characteristic UV/visible bands due to host-guest interactions.
IT 29556-33-0
RL: MOA (Modifier or additive use); PEP (Physical, engineering or
chemical process); PRP (Properties); PROC (Process); USES (Uses)
(microwave-assisted crystn. inclusion of coumarin and azo
dyes in AlPO4-5 mol. sieves with UV/visible spectra)
RN 29556-33-0 HCAPLUS
CN 1H-Benzimidazolium, 2-[7-(diethylamino)-2-oxo-2H-1-benzopyran-3-yl]-
1,3-dimethyl-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

CC 73-4 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 75

ST microwave crystn inclusion **dye** aluminophosphate zeolite;

UV visible **dye** inclusion aluminophosphate zeolite

IT Azo **dyes**

Molecular sieves

(microwave-assisted crystn. inclusion of coumarin and azo **dyes** in AlPO4-5 mol. sieves with UV/visible spectra)

IT Aluminophosphate zeolites

RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)

(microwave-assisted crystn. inclusion of coumarin and azo **dyes** in AlPO4-5 mol. sieves with UV/visible spectra)

IT Nonmetallic inclusions

(microwave-assisted crystn.; microwave-assisted crystn. inclusion of coumarin and azo **dyes** in AlPO4-5 mol. sieves with UV/visible spectra)

IT Crystallization

(microwave-assisted inclusion; microwave-assisted crystn. inclusion of coumarin and azo **dyes** in AlPO4-5 mol. sieves with UV/visible spectra)

IT 29556-33-0 85187-97-9 93783-70-1

RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)

(microwave-assisted crystn. inclusion of coumarin and azo **dyes** in AlPO4-5 mol. sieves with UV/visible spectra)

IT 7784-30-7

RL: PEP (Physical, engineering or chemical process); PRP

(Properties); PROC (Process)

(microwave-assisted crystn. inclusion of coumarin and azo
dyes in AlPO₄-5 mol. sieves with UV/visible spectra)

REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L40 ANSWER 22 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1996:244487 HCAPLUS

DOCUMENT NUMBER: 124:292130

TITLE: **Dyeing** properties of thermally
damaged/overdried wool

AUTHOR(S): Schaefer, Karola; Dechesne, Mathias

CORPORATE SOURCE: Deutsches Wollforschungsinstitut, RWTH Aachen
e.V., Germany

SOURCE: DWI Reports (1996), 117(Aachener
Textiltagung, 1995), 613-23
CODEN: DWIREC

PUBLISHER: Deutsches Wollforschungsinstitut an der
Technischen Hochschule Aachen

DOCUMENT TYPE: Journal

LANGUAGE: German

AB The yellowing of overdried wool can cause **dyeing** defects,
esp. with pastel nuances. The bath uptake of acid, 1:2 metal
complex, and reactive **dyes** at >150° or drying of
wool for 24 h at 110° is not recommended. Phthalocyanine
dyes are more readily sorbed onto dried wool than onto
undried. Wetfastness of some **dyed** wools can be reduced by
drying at >150° and for 30-60 min.

IT 53350-83-7, Maxilon Brilliant Flavine 10GFF

RL: PEP (Physical, engineering or chemical process); TEM (Technical
or engineered material use); PROC (Process); USES (Uses)
(**dyeing** properties of thermally damaged/overdried wool)

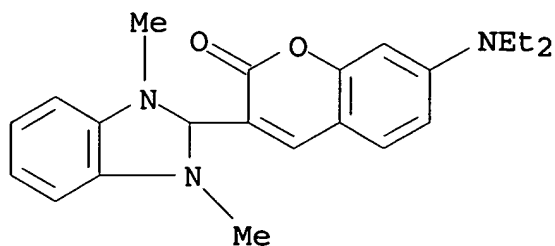
RN 53350-83-7 HCAPLUS

CN 1H-Benzimidazolium, 2-[7-(diethylamino)-2-oxo-2H-1-benzopyran-3-yl]-
1,3-dimethyl-, trichlorozincate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 50566-16-0

CMF C22 H24 N3 O2



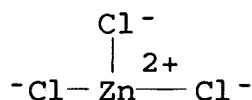
ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

CM 2

CRN 23603-98-7

CMF Cl3 Zn

CCI CCS



CC 40-6 (Textiles and Fibers)

ST wool **dyeing** overdrying effect; **dyeing** thermally damaged wool

IT **Dyeing**
(of thermally damaged/overdried wool)

IT 3351-05-1, C.I. Acid Blue 113 12234-64-9, C.I. Acid Blue 185
53350-83-7, Maxilon Brilliant Flavine 10GFF 70247-70-0,
Lanasol Yellow 4G 138068-60-7, Lanaset Red G

RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(**dyeing** properties of thermally damaged/overdried wool)

L40 ANSWER 23 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1996:128346 HCAPLUS

DOCUMENT NUMBER: 124:302381

TITLE: Photographic spectrally sensitizing **dye**

INVENTOR(S): Tanaka, Akira; Koderu, Tatsuya

PATENT ASSIGNEE(S): Mitsubishi Paper Mills Ltd, Japan

SOURCE: Jpn. Kokai Tokyo Koho, 7 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07311435	A2	19951128	JP 1994-101444	19940517

19940517

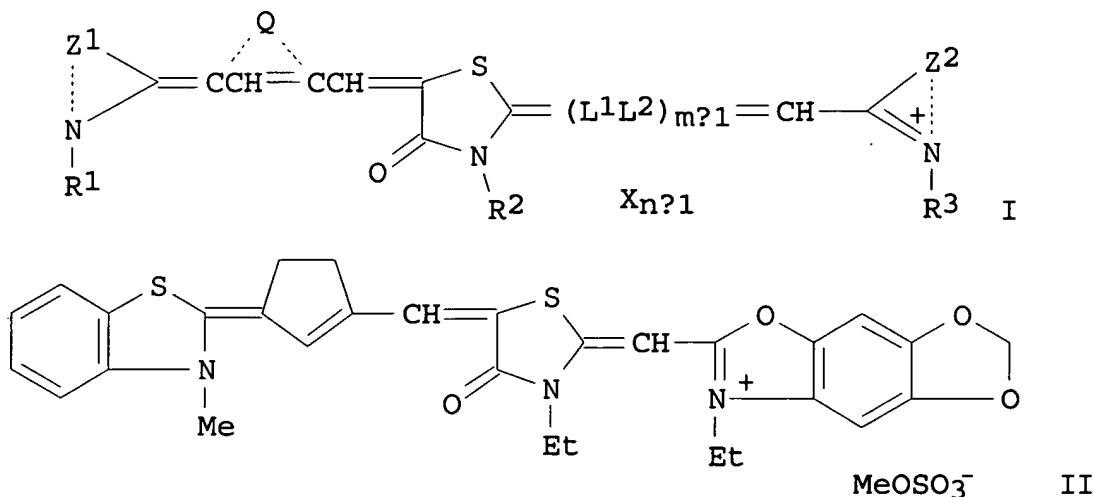
PRIORITY APPLN. INFO.:

<--
JP 1994-101444

19940517

GI

<--



AB The title sensitizing dye has the general formula I (Z1 = atoms required to form benzothiazole ring; Z2 = atoms required to form oxazole or thiazole ring; Q = atoms required to form a 5- or 6-membered cycloalkene; R1, R3 = alkyl, alkenyl; R2 = alkyl, alkenyl, aryl; L1, L2 = methine group; X = counter ion; m, n = 1, 2). The Ag halide photog materials using the dye show high sensitivity and low dye stain, residual

color, and fog. Thus, II was used as the dye in a Ag halide photog. material.

IT 175159-59-8P

RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(prepn. of thiazole cycloalkene deriv. photog. sensitizer)

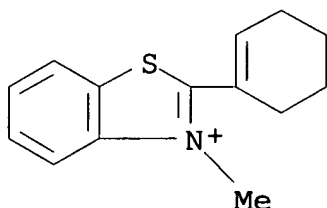
RN 175159-59-8 HCAPLUS

CN Benzothiazolium, 2-(1-cyclohexen-1-yl)-3-methyl-, methyl sulfate (9CI) (CA INDEX NAME)

CM 1

CRN 175159-58-7

CMF C14 H16 N S



CM 2

CRN 21228-90-0

CMF C H3 O4 S

Me-O-SO₃⁻

IC ICM G03C001-16

ICS C09B023-00; G03C001-18

CC 74-2 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT 175159-59-8P 175159-60-1P

RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(prepn. of thiazole cycloalkene deriv. photog. sensitizer)

L40 ANSWER 30 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1990:200606 HCAPLUS

DOCUMENT NUMBER: 112:200606
 TITLE: Manufacture of 3-(1,3,3-trimethylindolen-2-yl)-7-(dialkylamino)coumarin **dyes**
 INVENTOR(S): Roemhild, Hans Juergen; Loeffler, Ralph; Hartmann, Horst; Noack, Horst
 PATENT ASSIGNEE(S): VEB Chemiekombinat Bitterfeld, Ger. Dem. Rep.
 SOURCE: Ger. (East), 4 pp.
 CODEN: GEXXA8
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DD 272861	A1	19891025	DD 1988-316486	19880607

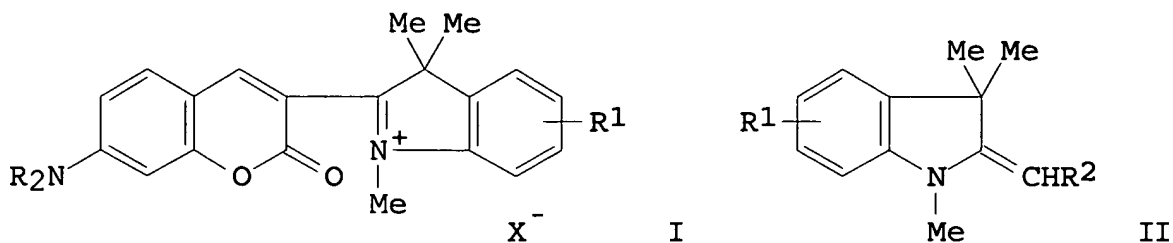
PRIORITY APPLN. INFO.:

<--
 DD 1988-316486

19880607

OTHER SOURCE(S): MARPAT 112:200606
 GI

<--



AB The title **dyes** I (R = C1-4 alkyl; R₁ = H, R, C1-4 alkoxy, halogen, NO₂; X = halogen, ZnCl₃) useful for **dyeing** acrylic fibers, are prepd. by the cyclization reaction of hydroxybenzaldehydes 4,2-R₂N(HO)C₆H₃CHO with indoline derivs. II (R₂ = CO₂R, CN, CONHPh) in aq. mineral acid solns. at elevated temps. Thus, 4-(diethylamino)-2-hydroxybenzaldehyde was cyclized with II (R₁ = H, R₂ = CONHPh) in the presence of 40% concd. HCl soln. at

100° for 2 h, followed by the addn. of aq. ZnCl_2 soln., forming I ($\text{R} = \text{Et}$, $\text{R}_1 = \text{H}$, $\text{X} = \text{ZnCl}_3$), λ_{max} (MeOH) 550 nm, which dyed polyacrylonitrile fibers in a fast rose shade.

IT 126916-42-5P 126938-18-9P 126938-20-3P

RL: PREP (Preparation)

(manuf. of, as rose dye for acrylic fibers)

RN 126916-42-5 HCAPLUS

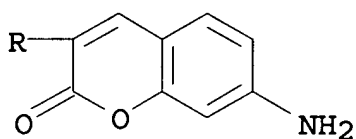
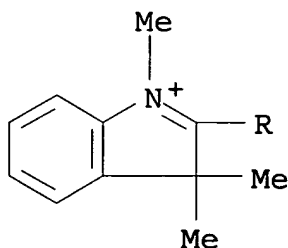
CN 3H-Indolium, 2-(7-amino-2-oxo-2H-1-benzopyran-3-yl)ethyl-1,3,3-trimethyl-, trichlorozincate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 126916-41-4

CMF C22 H23 N2 O2

CCI IDS



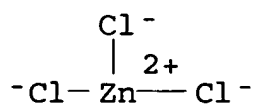
D1-Et

CM 2

CRN 23603-98-7

CMF Cl3 Zn

CCI CCS



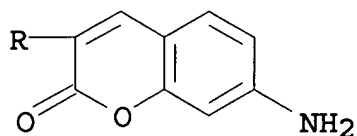
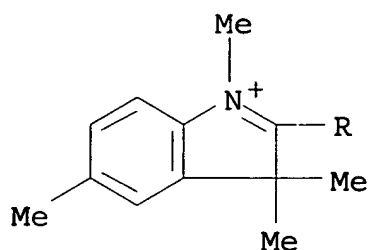
RN 126938-18-9 HCAPLUS

CN 3H-Indolium, 2-(7-amino-2-oxo-2H-1-benzopyran-3-yl)-1,3,3,5-tetramethyl-, trichlorozincate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 126938-17-8

CMF C21 H21 N2 O2

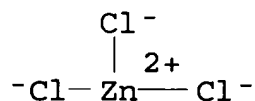


CM 2

CRN 23603-98-7

CMF Cl3 Zn

CCI CCS



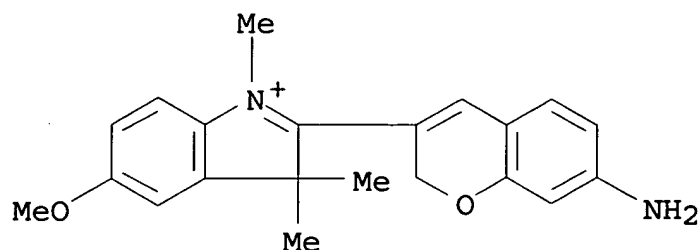
RN 126938-20-3 HCAPLUS

CN 3H-Indolium, 2-(7-amino-2H-1-benzopyran-3-yl)-5-methoxy-1,3,3-trimethyl-, trichlorozincate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 126938-19-0

CMF C21 H23 N2 O2

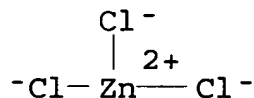


CM 2

CRN 23603-98-7

CMF Cl3 Zn

CCI CCS



IT 126938-22-5P

RL: PREP (Preparation)

(manuf. of, as violet dye for acrylic fibers)

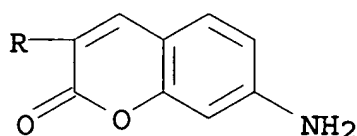
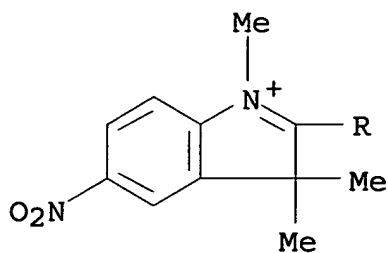
RN 126938-22-5 HCAPLUS

CN 3H-Indolium, 2-(7-amino-2-oxo-2H-1-benzopyran-3-yl)-1,3,3-trimethyl-5-nitro-, trichlorozincate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 126938-21-4

CMF C20 H18 N3 O4

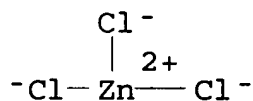


CM 2

CRN 23603-98-7

CMF Cl3 Zn

CCI CCS



IC ICM C09B057-02

ICS C07D405-04; C07D209-10; C07D311-16

CC 41-5 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)

Section cross-reference(s): 27, 40

ST coumarin trimethylindolenyl **dye** manuf;
trimethylindolenyldialkylaminocoumarin **dye** manuf acrylic
fiber; dialkylaminohydroxybenzaldehyde cyclization trimethylindoline
deriv

IT Acrylic fibers, uses and miscellaneous

RL: USES (Uses)

(dyes for, (trimethylindolenyl) (dialkylamino) coumarins
as, manuf. of)

IT Ring closure and formation

(of (dialkylamino)hydroxybenzaldehydes with substituted indoline

derivs., manuf. of substituted coumarin **dyes** by)

IT **Dyes**

(fluorescent, (trimethylindolenyl)(diakylamino)coumarins, manuf. of, for acrylic fibers)

IT 126916-42-5P 126938-18-9P 126938-20-3P

RL: PREP (Preparation)

(manuf. of, as rose **dye** for acrylic fibers)

IT 126938-22-5P

RL: PREP (Preparation)

(manuf. of, as violet **dye** for acrylic fibers)

L40 ANSWER 31 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1985:506286 HCAPLUS

DOCUMENT NUMBER: 103:106286

TITLE: Fluorescence properties of polymethine **dyes** with bridged chains

AUTHOR(S): Behrmann, K.; Birckner, E.; Fanghaenel, E.

CORPORATE SOURCE: Sekt. Chem., Tech. Hochsch. "Carl Schorlemmer" Leuna-Merseburg, Merseburg, DDR-4200, Ger. Dem. Rep.

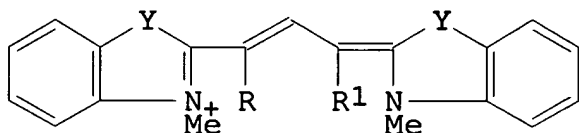
SOURCE: Journal fuer Praktische Chemie (Leipzig) (1984), 326(6), 1034-6

CODEN: JPCEAO; ISSN: 0021-8383

DOCUMENT TYPE: Journal

LANGUAGE: German

GI



ClO_4^-

I

AB The fluorescence quantum yield (Φ) and fluorescence lifetime of I [Y = O, RR1 = (CH₂)₂] [88254-96-0] and I [Y = O, RR1 = (CH₂)₃] [88254-98-2] after excitation of 514 nm in the OH were both higher than that of I (Y = O, R = R1 = H) [97165-72-5], with the (CH₂)₂ bridge having a considerably stronger effect than (CH₂)₃. In the case of I [Y = S, RR1 = (CH₂)₂] [88254-88-0], Φ was the same as that of I (Y = S, R = R1 = H) [41307-89-5] whereas Φ for I [Y = S, RR1 = (CH₂)₃] [88254-90-4] was much lower.

The results are briefly discussed on the basis of steric and torsional effects.

IT 88254-90-4 88254-98-2

RL: USES (Uses)

(fluorescence quantum yield and lifetime of, in methanol)

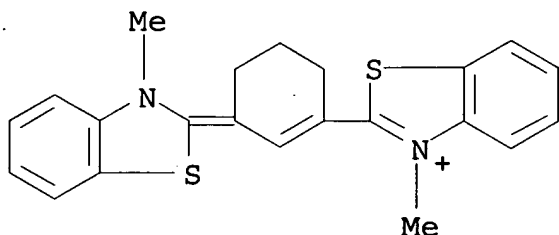
RN 88254-90-4 HCAPLUS

CN Benzothiazolium, 3-methyl-2-[3-(3-methyl-2(3H)-benzothiazolylydene)-1-cyclohexen-1-yl]-, perchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 88254-89-1

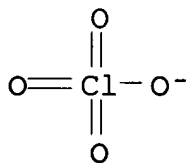
CMF C22 H21 N2 S2



CM 2

CRN 14797-73-0

CMF Cl O4



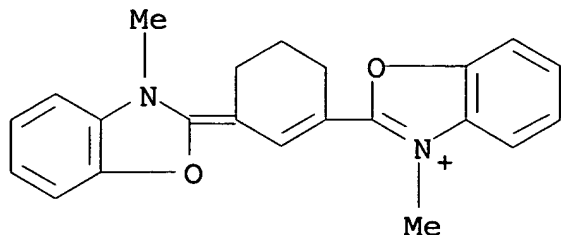
RN 88254-98-2 HCAPLUS

CN Benzoxazolium, 3-methyl-2-[3-(3-methyl-2(3H)-benzoxazolylydene)-1-cyclohexen-1-yl]-, perchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 88254-97-1

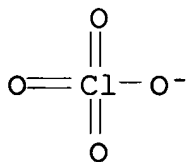
CMF C22 H21 N2 O2



CM 2

CRN 14797-73-0

CMF Cl O4



- CC 41-11 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
Section cross-reference(s): 22, 73, 74
- ST polymethine **dye** bridged fluorescence; carbocyanine **dye** bridged fluorescence; bridging carbocyanine **dye** fluorescence; oxacarbocyanine **dye** bridge fluorescence; thiocarbocyanine **dye** bridge fluorescence; torsion effect **dye** fluorescence; steric effect **dye** fluorescence
- IT Fluorescence
(of oxa- and thiocarbocyanine **dyes**, effect of chain bridging on)
- IT Steric effect
(on fluorescence properties of chain-bridged oxa- and thiocarbocyanine **dyes**)
- IT **Dyes**, cyanine
(oxa- and thiocarbocyanines, fluorescence properties of, effect of chain bridging on)
- IT 41307-89-5 88254-88-0 **88254-90-4** 88254-96-0
88254-98-2 97165-72-5

RL: USES (Uses)
(fluorescence quantum yield and lifetime of, in methanol)

L40 ANSWER 32 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1984:408720 HCAPLUS
DOCUMENT NUMBER: 101:8720
TITLE: Cyanine **dyes**
INVENTOR(S): Fanghaenel, Egon; Behrmann, Klaus; Bach,
Guenther
PATENT ASSIGNEE(S): Ger. Dem. Rep.
SOURCE: Ger. (East), 8 pp.
CODEN: GEXXA8
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	
DD 204938	A1	19831214	DD 1982-239819	198205 13
			<--	
PRIORITY APPLN. INFO.:			DD 1982-239819	198205 13
			<--	

GI For diagram(s), see printed CA Issue.
AB Cyanine **dyes** I (R, R1 = (un)substituted alkyl, aralkyl, aryl, or alkenyl; Y, Y1 = O, S, Se, alkylimino, CH:CH, dialkylmethylene; Z, Z1 = atoms necessary to complete an optionally fused and substituted 5- or 6-membered heterocyclic ring; X- = anion; n = 2, 3; m = 0,1), useful as sensitizers for information recording materials, are prepd. by condensing II (R2, R3 = alkyl, aryl; R2R3N = heterocyclic ring) with III (R4 = lower alkyl) or IV (R5 = H, acyl; R6 = aryl) in an inert solvent contg. an org. base. For example, condensation of 1.06 g 3-methyl-2-(2-morpholinocyclohexyl)benzothiazolium diperchlorate [88272-71-3] with 1.2 g 3-methyl-2-(methylthio)benzothiazolium perchlorate [21377-13-9] in 10 mL Ac2O and 0.7 mL Et3N at reflux for 10 min gave 0.68 g (70%) 3-methyl-2-[3-(3-methylbenzothiazolin-2-ylidene)cyclohex-1-enyl]benzothiazolium perchlorate [88254-90-4].
IT 88254-90-4P 88254-94-8P 88254-98-2P

RL: IMF (Industrial manufacture); PREP (Preparation)
(prepn. of)

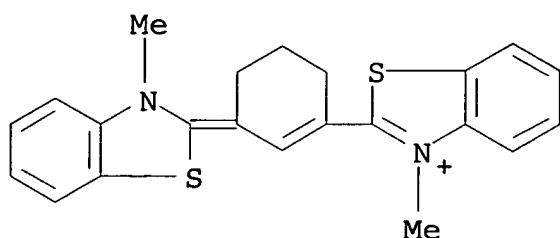
RN 88254-90-4 HCAPLUS

CN Benzothiazolium, 3-methyl-2-[3-(3-methyl-2(3H)-benzothiazolylidene)-1-cyclohexen-1-yl]-, perchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 88254-89-1

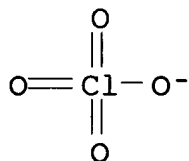
CMF C22 H21 N2 S2



CM 2

CRN 14797-73-0

CMF Cl O4



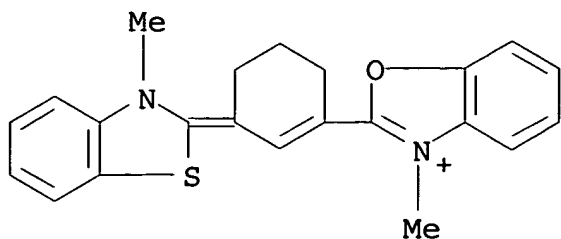
RN 88254-94-8 HCAPLUS

CN Benzoxazolium, 3-methyl-2-[3-(3-methyl-2(3H)-benzothiazolylidene)-1-cyclohexen-1-yl]-, perchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 88254-93-7

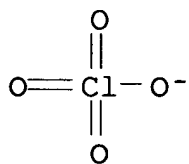
CMF C22 H21 N2 O S



CM 2

CRN 14797-73-0

CMF Cl O4



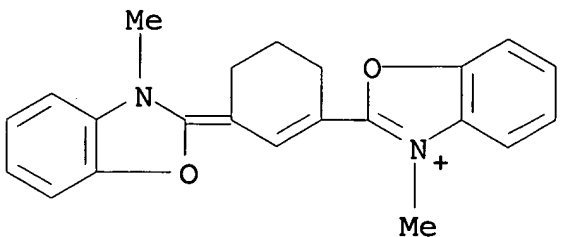
RN 88254-98-2 HCAPLUS

CN Benzoxazolium, 3-methyl-2-[3-(3-methyl-2(3H)-benzoxazolylidene)-1-cyclohexen-1-yl]-, perchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 88254-97-1

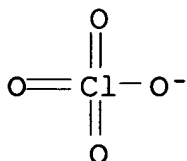
CMF C22 H21 N2 O2



CM 2

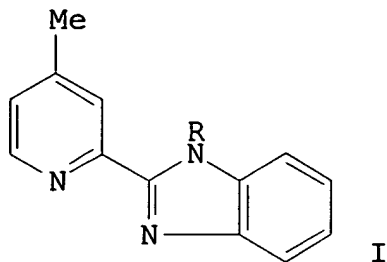
CRN 14797-73-0

CMF Cl O4

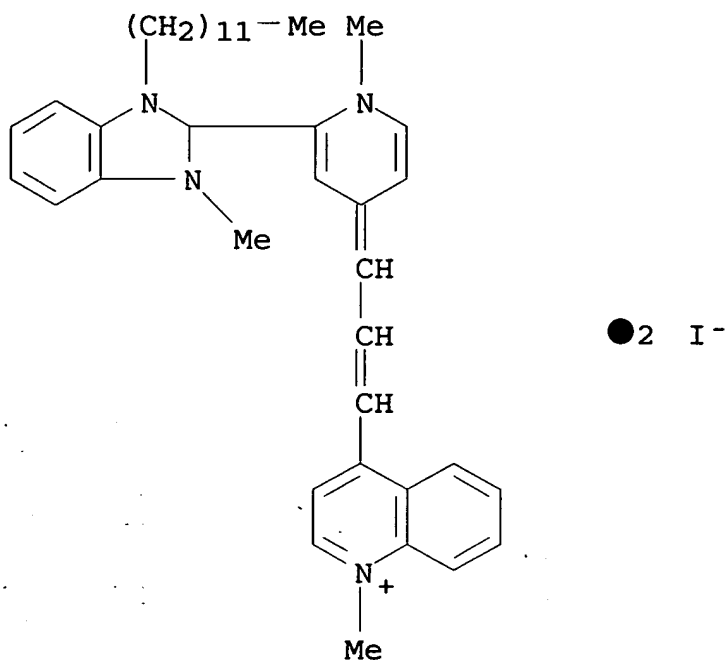


IC C09B023-16; C09B023-02
CC 41-11 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
Section cross-reference(s): 74
ST cyanine **dye** synthesis; bridged cyanine **dye** synthesis; cycloalkene cyanine **dye** synthesis; dicarbocyanine bridged synthesis; aminocycloalkane cyanine **dye** synthesis; sensitizer information recording; selenium cyanine **dye**
IT **Dyes**, cyanine
(cycloalkene bridge-contg. carbocyanines, manuf. of)
IT Recording materials
(sensitizer cyanine **dyes** for)
IT 88254-90-4P 88254-94-8P 88254-98-2P
RL: IMF (Industrial manufacture); PREP (Preparation)
(prepn. of)

L40 ANSWER 33 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1983:181109 HCAPLUS
DOCUMENT NUMBER: 98:181109
TITLE: (Methylpyridyl)benzimidazoles. Part I. Mono-, bis-quaternary salts and related polymethine **dyes**
AUTHOR(S): Barni, Ermanno; Savarino, Piero; Viscardi, Guido; Pelizzetti, Ezio
CORPORATE SOURCE: Ist. Chim. Org. Ind., Univ. Torino, Turin, 10125, Italy
SOURCE: Journal of Heterocyclic Chemistry (1983), 20(1), 23-8
CODEN: JHTCAD; ISSN: 0022-152X
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 98:181109
GI



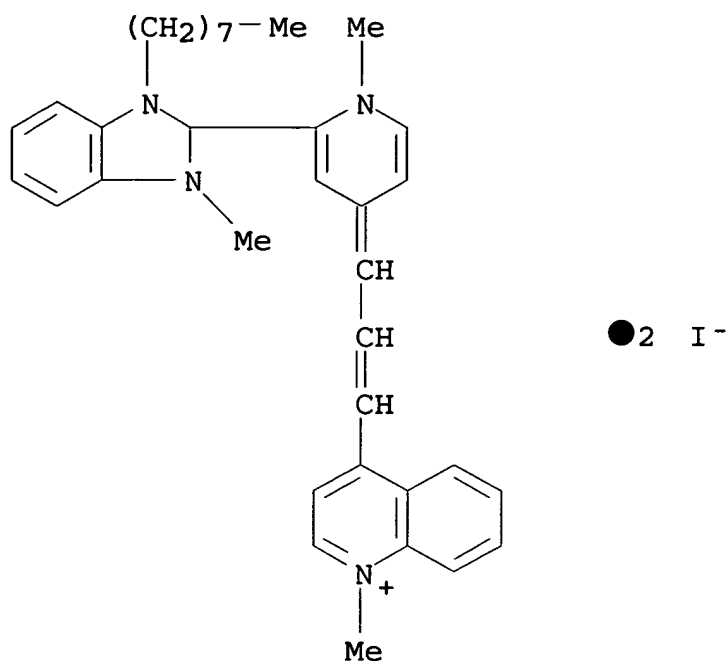
- AB Alkylation of I (R = H) [14044-47-4] with C8-16 alkyl bromides gave I (R = alkyl) (II), which formed the corresponding monoquaternary benzimidazolium derivs. (III) when treated with MeI or the bisquaternary benzimidazolium-pyridinium derivs. (IV) when treated with Me₂SO₄. Condensation of the 4-Me group of IV with 4-Me₂NC₆H₄CHO [100-10-7], (3-methyl-2-benzothiazolinyldene)acetaldehyde [4616-17-5], or 4-(acetanilidovinyl)-1-methylquinolinium iodide [85556-25-8] gave polymethine **dyes** (V). The spectra of II-V and the surface activity of III-V are discussed.
- IT 85556-20-3P 85556-21-4P 85556-22-5P
85556-23-6P 85556-24-7P 85570-57-6P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn., spectra and surface activity of)
- RN 85556-20-3 HCAPLUS
- CN Quinolinium, 4-[3-[2-(1-dodecyl-3-methyl-1H-benzimidazolium-2-yl)-1-methyl-4(1H)-pyridinyldene]-1-propenyl]-1-methyl-, diiodide (9CI)
(CA INDEX NAME)



ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

RN 85556-21-4 HCAPLUS

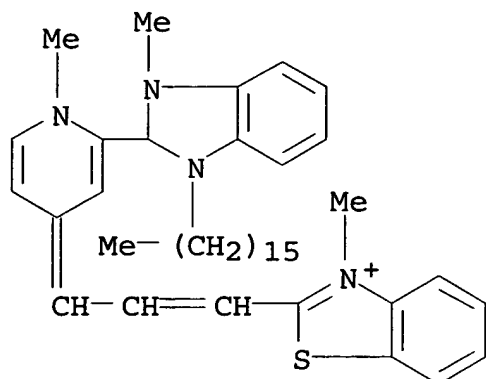
CN Quinolinium, 1-methyl-4-[3-[1-methyl-2-(1-methyl-3-octyl-1H-benzimidazolium-2-yl)-4(1H)-pyridinyldiene]-1-propenyl]-, diiodide (9CI) (CA INDEX NAME)



ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

RN 85556-22-5 HCAPLUS

CN Benzothiazolium, 2-[3-[2-(1-hexadecyl-3-methyl-1H-benzimidazolium-2-yl)-1-methyl-4(1H)-pyridinyldiene]-1-propenyl]-3-methyl-, diiodide (9CI) (CA INDEX NAME)

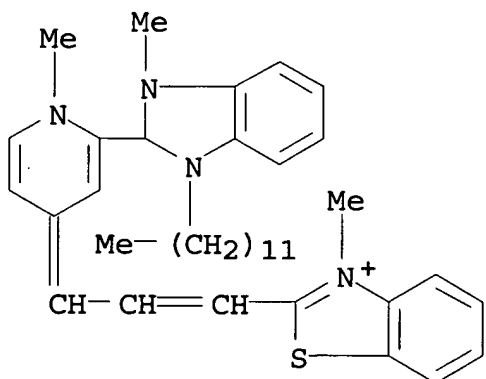


● 2 I⁻

ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

RN 85556-23-6 HCAPLUS

CN Benzothiazolium, 2-[3-[2-(1-dodecyl-3-methyl-1H-benzimidazolium-2-yl)-1-methyl-4(1H)-pyridinylidene]-1-propenyl]-3-methyl-, diiodide (9CI) (CA INDEX NAME)

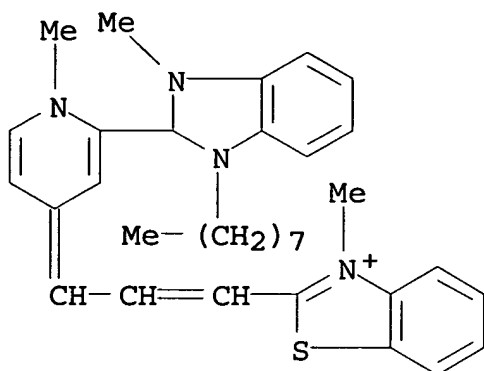


● 2 I⁻

ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

RN 85556-24-7 HCAPLUS

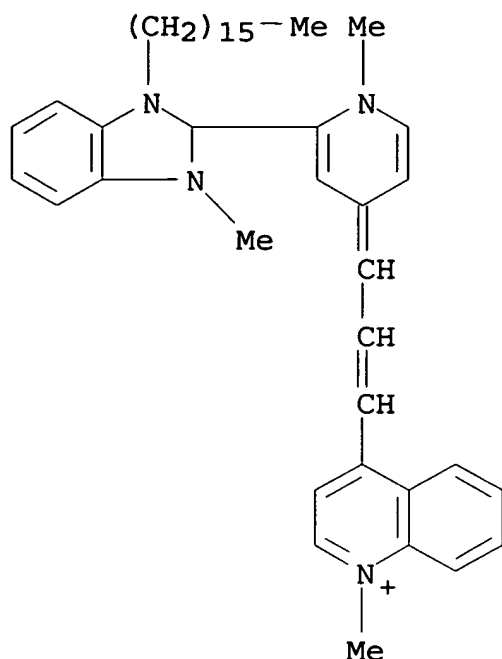
CN Benzothiazolium, 3-methyl-2-[3-[1-methyl-2-(1-methyl-3-octyl-1H-benzimidazolium-2-yl)-4(1H)-pyridinylidene]-1-propenyl]-, diiodide (9CI) (CA INDEX NAME)

● 2 I⁻

ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

RN 85570-57-6 HCAPLUS

CN Quinolinium, 4-[3-[2-(1-hexadecyl-3-methyl-1H-benzimidazolium-2-yl)-1-methyl-4(1H)-pyridinylidene]-1-propenyl]-1-methyl-, diiodide (9CI) (CA INDEX NAME)

●2 I⁻

ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

CC 41-6 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
 Section cross-reference(s): 27, 28

ST methylpyridylbenzimidazole quaternization; cyanine **dye**
 methylpyridylbenzimidazole; benzimidazole methylpyridyl quaternization; UV methylpyridylbenzimidazole quaternized; surface tension methylpyridylbenzimidazole salt; polymethine **dye**
 methylpyridylbenzimidazole

IT **Dyes**, cyanine
 (alkyl(methylpyridyl)benzimidazole-based, prepn. and phys. and spectral properties of)

IT Surface tension
 Ultraviolet and visible spectra
 (of quaternized alkyl(methylpyridyl)benzimidazoles and cyanine **dye** derivs.)

IT Molecular structure-property relationship
 (spectra, of quaternized alkyl(methylpyridyl)benzimidazoles and cyanine **dye** derivs.)

IT 85556-17-8P 85556-18-9P 85556-19-0P 85556-20-3P
 85556-21-4P 85556-22-5P 85556-23-6P
 85556-24-7P 85570-57-6P
 RL: SPN (Synthetic preparation); PREP (Preparation)

(prepn., spectra and surface activity of)
IT 85556-14-5P 85556-15-6P 85556-16-7P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn., spectral and surface properties, and polymethine
dye formation of)

L40 ANSWER 40 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1975:533254 HCAPLUS
DOCUMENT NUMBER: 83:133254
TITLE: Colored powdered resins
INVENTOR(S): Wakimoto, Saburo; Miyahara, Sadayasu; Hyosu,
Yoshihiko
PATENT ASSIGNEE(S): Shinroihi Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

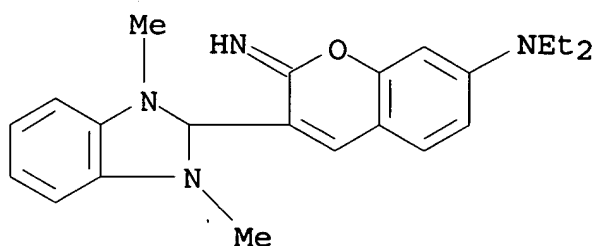
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	
JP 50048052	A2	19750428	JP 1973-98113	197308 31
				<--
PRIORITY APPLN. INFO.:			JP 1973-98113	A 197308 31
				<--

GI For diagram(s), see printed CA Issue.
AB Compds. I (R and R1 were low alkyls, X were anions) were used as
yellow **dyes** for resins. Thus, a mixt. of
p-toluenesulfonamide 181, paraformaldehyde 45, I (R = Et; R1 = Me; X
= 4-MeC6H4SO3 [56389-56-1]) 5, and melamine 18 g was
heated at 150° for 4 hr, pulverized to prep. a fluorescent
yellow powd. polymer [56389-17-4], and mixed with a water-sol.
vehicle to prep. a 1:1 dispersion which (10 g) was mixed with 20 g
acrylate emulsion and 70 g aq. emulsion of mineral spirit, printed
on a cloth, and heated at 130° for 5 min.
IT 56389-56-1
RL: USES (Uses)
(**dyes**, formaldehyde-melamine-toluenesulfonamide
copolymer contg., for textile printing)

RN 56389-56-1 HCAPLUS
 CN 1H-Benzimidazolium, 2-[7-(diethylamino)-2-imino-2H-1-benzopyran-3-yl]-1,3-dimethyl-, salt with 4-methylbenzenesulfonic acid (1:1)
 (9CI) (CA INDEX NAME)

CM 1

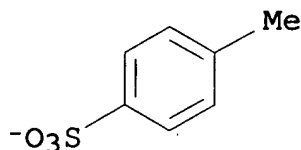
CRN 50565-96-3
 CMF C22 H25 N4 O



ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

CM 2

CRN 16722-51-3
 CMF C7 H7 O3 S



IC C08L; C08K; C07D; C09D
 CC 39-7 (Textiles)
 ST **dyeing** powd polymer; textile printing **color**
 resin; imidocoumarine ammonium salt **dye**
 IT Textile printing
 (with formaldehyde-melamine-toluenesulfonamide polymer contg.
 imidocoumarine ammonium salt **dye**)
 IT 25067-00-9
 RL: USES (Uses).
 (contg. imidocoumarine ammonium salt **dye**, for textile

printing)

IT 56389-56-1

RL: USES (Uses)

(dyes, formaldehyde-melamine-toluenesulfonamide
copolymer contg., for textile printing)

L40 ANSWER 41 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1975:516963 HCAPLUS

DOCUMENT NUMBER: 83:116963

TITLE: Cationic dyes for acrylic fibers

INVENTOR(S): Terayama, Mutsuo; Emori, Fumitoshi; Hatano,
Yoshihiro; Yamamoto, Kenji

PATENT ASSIGNEE(S): Yamamoto Synthetic Chemical Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	
JP 50039733	A2	19750412	JP 1973-91904	197308 16
			<--	
JP 55011144	B4	19800322		
PRIORITY APPLN. INFO.:			JP 1973-91904	A 197308 16
			<--	

GI For diagram(s), see printed CA Issue.

AB Cationic dyes I (R1, R2 = lower alkyl; R3, R4 = H, lower alkyl, cyclohexyl, or NR3R4 = morpholino or piperazino; X- is an anion) are prepd. by reacting 2-(cyanomethyl)benzimidazolium salts with 2,4-HO(R3R4N)C6H3CHO. Thus, 2-(cyanomethyl)benzimidazole [4414-88-4] was methylated and quaternized with p-MeC6H4SO3Me in PhCl, and the product condensed with 2,4-HO(Et2N)C6H3CHO [17754-90-4] and treated with ZnCl2 to give I (R1 = R2 = Me, R3 = R4 = Et, X = ZnCl3) [27778-30-9] as a yellow-brown powder, which dyes Vonnell fibers in greenish yellow shades. I (R1-R4 = Me, X = ZnCl3) [56286-40-9] was similarly prepd.

IT 27778-30-9P

RL: IMF (Industrial manufacture); PREP (Preparation)

(prepn. and acrylic fiber dyeing by)

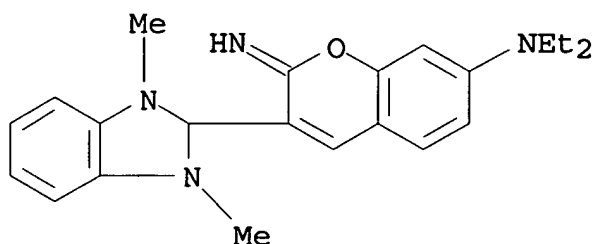
RN 27778-30-9 HCAPLUS

CN 1H-Benzimidazolium, 2-[7-(diethylamino)-2-imino-2H-1-benzopyran-3-yl]-1,3-dimethyl-, trichlorozincate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 50565-96-3

CMF C22 H25 N4 O



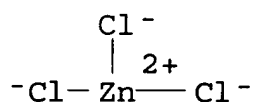
ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

CM 2

CRN 23603-98-7

CMF Cl3 Zn

CCI CCS



IT 56286-40-9P

RL: IMF (Industrial manufacture); PREP (Preparation)

(prepn. of)

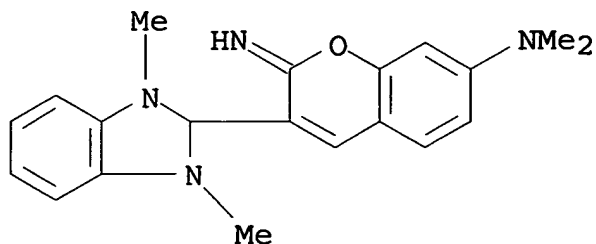
RN 56286-40-9 HCAPLUS

CN 1H-Benzimidazolium, 2-[7-(dimethylamino)-2-imino-2H-1-benzopyran-3-yl]-1,3-dimethyl-, trichlorozincate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 56286-39-6

CMF C20 H21 N4 O



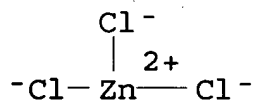
ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

CM 2

CRN 23603-98-7

CMF Cl3 Zn

CCI CCS



INCL 23A0; 48B111

CC 40-6 (Dyes, Fluorescent Whitening Agents, and Photosensitizers)
Section cross-reference(s): 28

ST benzopyranylbenzimidazolium chlorozincate;
aminobenzopyranylbenzimidazolium chlorozincate;
iminobenzopyranylbenzimidazolium chlorozincate; benzimidazolium
chlorozincate benzopyranyl; cationic **dye** acrylic fiber;
disperse **dye** acrylic fiber

IT **Dyes**
([(dialkylamino)iminobenzopyranyl]dimethylbenzimidazolium
chlorozincates, acrylic fibers)

IT Acrylic fibers
RL: USES (Uses)
(**dyes** for, [(dialkylamino)iminobenzopyranyl]dimethylbenzimidazolium chlorozincates as)

IT **27778-30-9P**
RL: IMF (Industrial manufacture); PREP (Preparation)
(prepn. and acrylic fiber **dyeing** by)

IT **56286-40-9P**
RL: IMF (Industrial manufacture); PREP (Preparation)

(prepn. of)

L40 ANSWER 42 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1975:87681 HCAPLUS
 DOCUMENT NUMBER: 82:87681
 TITLE: N-Substituted iminocoumarin **dyes**
 INVENTOR(S): Scheuermann, Horst; Augart, Dietmar; Mach, Wolfgang
 PATENT ASSIGNEE(S): Badische Anilin- & Soda-Fabrik AG
 SOURCE: Ger. Offen., 25 pp.
 CODEN: GWXXBX
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO. -----	KIND ----	DATE -----	APPLICATION NO. -----	DATE
DE 2226211	A1	19731213	DE 1972-2226211	197205 30
US 3910912	A	19751007	<-- US 1973-362900	197305 23
FR 2186513	A1	19740111	<-- FR 1973-19125	197305 25
IT 985206	A	19741130	<-- IT 1973-50216	197305 25
CH 574989	A	19760430	<-- CH 1973-7660	197305 28
BE 800168	A1	19731129	<-- BE 1973-131627	197305 29
GB 1422605	A	19760128	<-- GB 1973-25362	197305

29

JP 49050018

A2

19740515

JP 1973-59940

197305

30

PRIORITY APPLN. INFO.:

DE 1972-2226211

A

197205

30

GI For diagram(s), see printed CA Issue.

AB Iminocoumarin **dyes** [I, R = Me, Et; R1 = Ph, substituted Ph, PhNHNH, alkyl, substituted alkyl, p-C6H4, H, OH; R2 = 2-benzimidazolyl, p-HCC6H4, (methoxycarbonyl)thienyl, (methoxycarbonyl)furyl, 2-benzothiazolyl, 2-thiazolyl, thiadiazolyl, benzothiazolium, thiazolium, benzimidazolium, thiadiazolium, oxoquinazolinyl; n = 1,2), yellow to red **dyes** for polyamide, polyester, acetate, and acrylic fibers, were prepd. Thus, a mixt. of 3-(2-benzimidazolyl)-7-diethylaminocoumarinimide and p-ClC6H4NH2 was refluxed in EtOCH2CH2OH for 4 hr to give 85% coumarinimide **dye** (II). The other I were similarly prepd.

IT 51347-75-2P 51538-35-3P
RL: IMF (Industrial manufacture); PREP (Preparation)
(prepn. of)

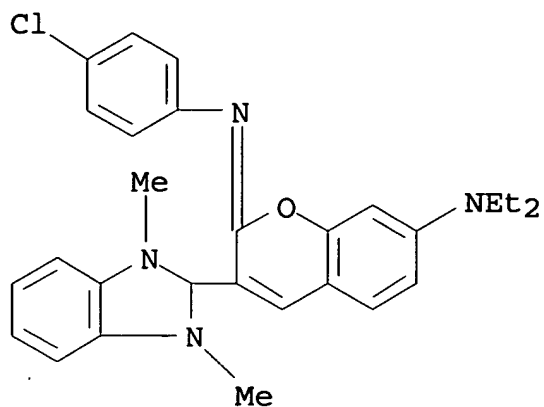
RN 51347-75-2 HCAPLUS

CN 1H-Benzimidazolium, 2-[2-[(4-chlorophenyl)imino]-7-(diethylamino)-2H-1-benzopyran-3-yl]-1,3-dimethyl-, methyl sulfate (9CI) (CA INDEX NAME)

CM 1

CRN 51347-74-1

CMF C28 H28 Cl N4 O



ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

CM 2

CRN 21228-90-0

CMF C H3 O4 S

Me-O-SO₃⁻

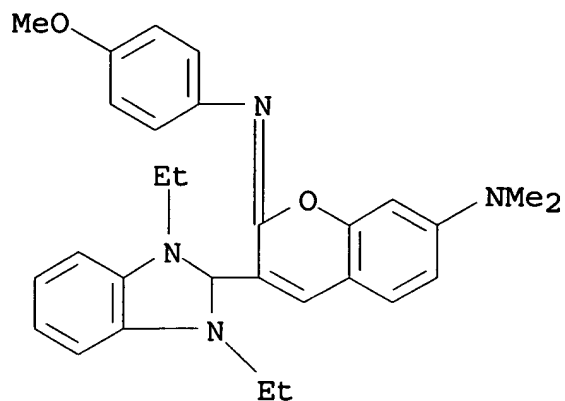
RN 51538-35-3 HCAPLUS

CN 1H-Benzimidazolium, 2-[7-(dimethylamino)-2-[(4-methoxyphenyl)imino]-2H-1-benzopyran-3-yl]-1,3-diethyl-, (T-4)-tetrachlorozincate(2-)
(2:1) (9CI) (CA INDEX NAME)

CM 1

CRN 51538-34-2

CMF C29 H31 N4 O2



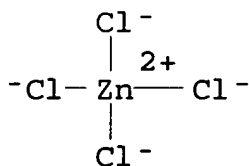
ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

CM 2

CRN 15201-05-5

CMF Cl4 Zn

CCI CCS



IC C08B

CC 40-6 (Dyes, Fluorescent Whitening Agents, and Photosensitizers)

ST iminocoumarin **dye**; coumarinimide **dye**

IT Acetate fibers

Acrylic fibers

Polyamide fibers

Polyester fibers

RL: USES (Uses)

(**dyes** for, iminobenzopyran derivs. as)

IT **Dyes**

(iminobenzopyran derivs., acetate acrylic polyamide and polyester fibers)

IT	51203-04-4P	51347-08-1P	51347-30-9P	51347-31-0P	51347-32-1P
	51347-33-2P	51347-34-3P	51347-35-4P	51347-36-5P	51347-37-6P

51347-38-7P	51347-39-8P	51347-40-1P	51347-41-2P	51347-42-3P
51347-43-4P	51347-44-5P	51347-45-6P	51347-46-7P	51347-47-8P
51347-48-9P	51347-49-0P	51347-50-3P	51347-51-4P	51347-52-5P
51347-53-6P	51347-54-7P	51347-55-8P	51347-56-9P	51347-57-0P
51347-58-1P	51347-59-2P	51347-60-5P	51347-61-6P	51347-62-7P
51347-63-8P	51347-64-9P	51347-65-0P	51347-66-1P	51347-67-2P
51347-68-3P	51347-69-4P	51347-70-7P	51347-71-8P	51347-72-9P
51347-73-0P	51347-75-2P	51347-77-4P	51347-78-5P	
51347-79-6P	51347-80-9P	51347-81-0P	51347-82-1P	51347-83-2P
51347-85-4P	51347-86-5P	51347-88-7P	51347-90-1P	51384-43-1P
51538-35-3P				

RL: IMF (Industrial manufacture); PREP (Preparation)
(prepn. of)

L40 ANSWER 43 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1975:32460 HCAPLUS
 DOCUMENT NUMBER: 82:32460
 TITLE: Coumarin **dyes**
 INVENTOR(S): Ohkawa, Masaaki; Takatsuki, Ishii
 PATENT ASSIGNEE(S): Sumitomo Chemical Co., Ltd.
 SOURCE: Ger. Offen., 19 pp.
 CODEN: GWXXBX
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	
DE 2364478	A1	19740704	DE 1973-2364478	197312 24
			<--	
JP 49087730	A2	19740822	JP 1973-2181	197212 25
			<--	
JP 55029110	B4	19800801		
US 3933847	A	19760120	US 1973-426346	197312 19
			<--	
PRIORITY APPLN. INFO.:			JP 1973-2181	A 197212

<--

GI For diagram(s), see printed CA Issue.

AB Coumarin **dyes** I (R = Me or Et; R1 = H, Cl, or Me) were prepd. by reaction of 2,4-HO(R2N)C6H3CHO with 2-benzimidazolylacetic acids which had been prepd. by treating 3,4-(H2N)2C6H3R1 with R2CH2R3 (R2 = CN, CO2H; R3 = CO2H, CN, CONH2, CO2Et) in the presence of 30-50% H2SO4. Quaternary derivs. of I were also prepd. Thus, refluxing o-(H2N)2C6H4 with NCCH2CO2Et in 50% H2SO4 for 10 hr followed by heating with 2,4-HO(Et2N)C6H3CHO 1hr at 90-5° gave **dye** I(R = Et, R1 = H) (II) [27425-55-4], greenish yellow on polyester fibers. Similarly prepd. were 3 other I. Methylation of II with Me2SO4 5 hr at 90-100° followed by addn. of NaCl and ZnCl2 gave **dye** III [53350-83-7], greenish yellow on acrylic fibers.

IT 53350-83-7P

RL: IMF (Industrial manufacture); PREP (Preparation)
(prepn. of)

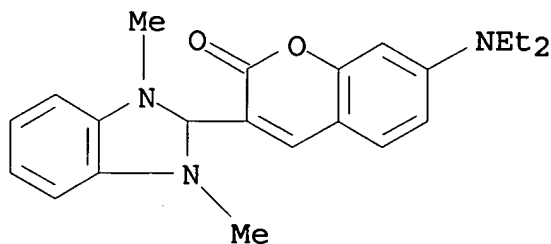
RN 53350-83-7 HCAPLUS

CN 1H-Benzimidazolium, 2-[7-(diethylamino)-2-oxo-2H-1-benzopyran-3-yl]-1,3-dimethyl-, trichlorozincate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 50566-16-0

CMF C22 H24 N3 O2



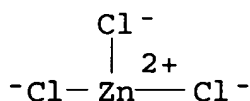
ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

CM 2

CRN 23603-98-7

CMF Cl3 Zn

CCI CCS



IC C09B
 CC 40-6 (Dyes, Fluorescent Whitening Agents, and Photosensitizers)
 Section cross-reference(s): 27, 28
 ST coumarin **dye**; acrylic fiber **dye**;
 benzimidazolylcoumarin **dye**; polyester fiber **dye**;
 salicylaldehyde benzimidazolylacetic acid reaction
 IT **Dyes**
 (benzimidazolylcoumarin derivs., for acrylic and polyester
 fibers)
 IT Acrylic fibers
 Polyester fibers
 RL: USES (Uses)
 (**dyes** for, benzimidazolylcoumarin derivs. as)
 IT 27425-55-4P 53350-28-0P 53350-29-1P 53350-30-4P
53350-83-7P
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (prepn. of)

L40 ANSWER 50 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1972:47388 HCAPLUS
 DOCUMENT NUMBER: 76:47388
 TITLE: Fluorescent benzimidazolium benzopyran-2-one
dyes
 INVENTOR(S): Dehnert, Johannes; Grau, Gerhard
 PATENT ASSIGNEE(S): Badische Anilin- & Soda-Fabrik AG
 SOURCE: Ger. Offen., 12 pp.
 CODEN: GWXXBX
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 2
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	
DE 2005968	A	19710909	DE 1970-2005968	197002 10

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DE 2005968	B2	19770707			
CH 553242	A	19740830	CH 1971-1193		197101 27
			<--		
US 3766199	A	19731016	US 1971-112453		197102 03
			<--		
NL 7101589	A	19710812	NL 1971-1589		197102 05
			<--		
FR 2078267	A5	19711105	FR 1971-3950		197102 05
			<--		
BE 762734	A1	19710810	BE 1971-99579		197102 10
			<--		
GB 1331144	A	19730919	GB 1971-21414		197104 19
			<--		
PRIORITY APPLN. INFO.:			DE 1970-2005968	A	197002 10
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			DE 1970-2011500	A	197003 11
			<--		

AB Yellow **dyes** [I, R and R1 = Me and (or) Et] for polyacrylonitrile textiles, also useful as fluorescent whitening agents, were prepd. by condensing 1,3-dialkyl-2-(cyanomethyl)benzimidazolium salts with 4-(dialkylamino)salicylaldehydes in an acidic medium. Thus, reaction of aq. 2-(cyanomethyl)benzimidazole-MgO suspension with Me₂SO₄ at 50-70.deg. gave 1,3-dimethyl-2-(cyanomethyl)benzimidazolium Me sulfate, which was treated with 4,2-Et₂N(HO)C₆H₃CHO at 90-5.deg. and pH 1 for 1 hr and then with ZnCl₂ at 30-40.deg. to give 2-[7-(diethylamino)-2-oxo-2H-1-benzopyran-3-yl]-1,3-dimethylbenzimidazolium tetrachlorozincate (I, R = Et, R1 = Me) [33806-00-7]. Two other I were similarly prepd.

IT 33806-00-7P 35244-71-4P 35253-90-8P

35408-51-6P

RL: IMF (Industrial manufacture); PREP (Preparation)
(prepn. of)

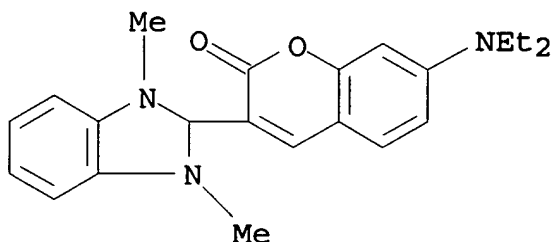
RN 33806-00-7 HCAPLUS

CN 1H-Benzimidazolium, 2-[7-(diethylamino)-2-oxo-2H-1-benzopyran-3-yl]-
1,3-dimethyl-, (T-4)-tetrachlorozincate(2-) (2:1) (9CI) (CA INDEX
NAME)

CM 1

CRN 50566-16-0

CMF C22 H24 N3 O2



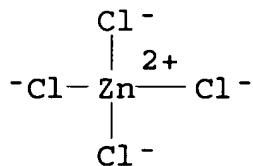
ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

CM 2

CRN 15201-05-5

CMF Cl4 Zn

CCI CCS



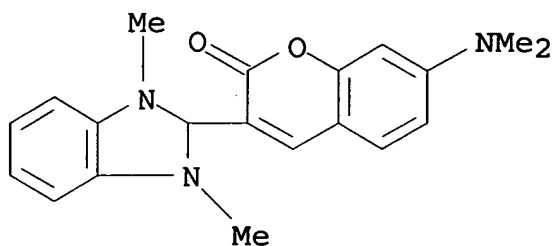
RN 35244-71-4 HCAPLUS

CN 1H-Benzimidazolium, 2-[7-(dimethylamino)-2-oxo-2H-1-benzopyran-3-yl]-
1,3-dimethyl-, (T-4)-tetrachlorozincate(2-) (2:1) (9CI) (CA INDEX
NAME)

CM 1

CRN 47432-44-0

CMF C20 H20 N3 O2



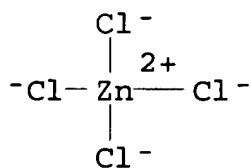
ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

CM 2

CRN 15201-05-5

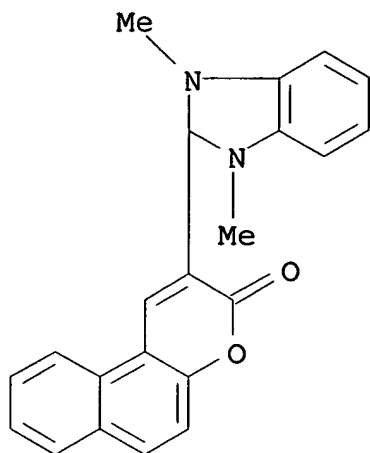
CMF Cl4 Zn

CCI CCS



RN 35253-90-8 HCAPLUS

CN 1H-Benzimidazolium, 1,3-dimethyl-2-(3-oxo-3H-naphtho[2,1-b]pyran-2-yl)-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

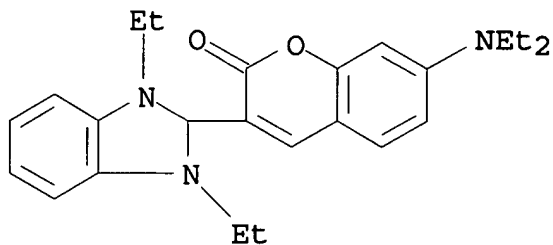
RN 35408-51-6 HCAPLUS

CN 1H-Benzimidazolium, 2-[7-(diethylamino)-2-oxo-2H-1-benzopyran-3-yl]-1,3-diethyl-, (T-4)-tetrachlorozincate(2-) (2:1) (9CI) (CA INDEX NAME)

CM 1

CRN 47616-93-3

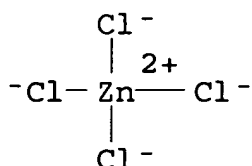
CMF C24 H28 N3 O2



ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

CM 2

CRN 15201-05-5
 CMF Cl4 Zn
 CCI CCS



IC C07D
 CC 40 (Dyes, Fluorescent Whitening Agents, and Photosensitizers)
 ST fluorescent cationic **dye**; benzopyranone benzimidazolium
dye; coumarin **dye**; polyacrylonitrile fiber
dye
 IT 33806-00-7P 35244-71-4P 35253-90-8P
 35408-51-6P
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (prepn. of)

L40 ANSWER 51 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1970:457084 HCAPLUS
 DOCUMENT NUMBER: 73:57084
 TITLE: Concentrated solutions of cyclic ammonium
dye salts
 INVENTOR(S): Favre, Francois; Voltz, Jacques
 PATENT ASSIGNEE(S): Geigy, J. R., A.-G.
 SOURCE: Patentschrift (Switz.), 11 pp.
 CODEN: SWXXAS
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	
CH 487231	A	19700315	CH 1967-487231	196710 03
BE 721753	A	19690402	BE 1968-721753	

196810
02

FR 1583043 A 19691010 FR 1968-1583043

196810
02

GB 1214394 A 19701202 GB 1968-1214394

196810
02

PRIORITY APPLN. INFO.: CH 1967-13795 A

196710
03

GI For diagram(s), see printed CA Issue.

AB Concd. solns. of azo, anthraquinone, methine, and benzopyran
dyes (contg. cyclic ammonium but no acid groups) in an
 aliphatic C1-4 monocarboxylic acid are useful for **dyeing**
 polyacrylonitrile fibers. Thus, 33.5 g dry I was pasted with 60 ml
 AcOH, 240 ml H₂O of (45-50°) added by sliming, and the mixt.
 maintained at 20° for 14 hr and filtered to give a dark blue,
 stable soln. II gave a yellow soln.

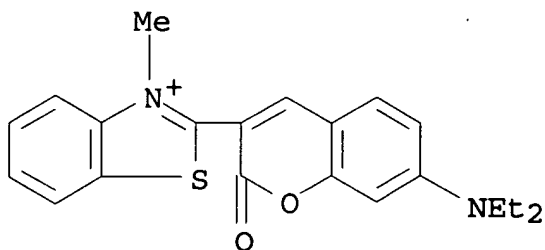
IT 29508-51-8 29556-33-0

RL: USES (Uses)

(concd. solns. of)

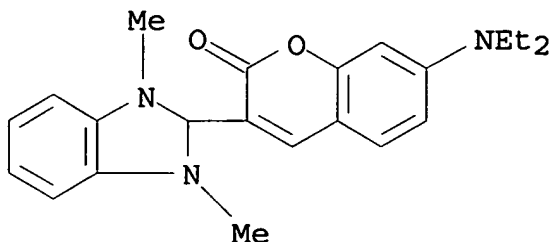
RN 29508-51-8 HCAPLUS

CN Benzothiazolium, 2-[7-(diethylamino)-2-oxo-2H-1-benzopyran-3-yl]-3-
 methyl-, chloride (8CI) (CA INDEX NAME)



● Cl⁻

RN 29556-33-0 HCAPLUS

CN 1H-Benzimidazolium, 2-[7-(diethylamino)-2-oxo-2H-1-benzopyran-3-yl]-
1,3-dimethyl-, chloride (9CI) (CA INDEX NAME)● Cl⁻

ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

IC C09B

CC 39 (Textiles)

ST **dye** solns concd

IT Fiber, acrylic, uses and miscellaneous

RL: USES (Uses)

(dyeing of, concd. **dye** solns. for)IT **Dyeing**(of acrylic fiber, concd. **dye** solns. for)

IT 26850-47-5 29508-47-2 29508-48-3 29508-49-4 29508-50-7

29508-51-8 29556-33-0

RL: USES (Uses)

(concd. solns. of)

L40 ANSWER 52 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1970:446671 HCAPLUS

DOCUMENT NUMBER: 73:46671

TITLE: Anionic dispersions of salts of cationic
dyes and arenesulfonatesINVENTOR(S): Clarke, Ray Allen; Stryker, Harvey I.; Kissa,
Erik

PATENT ASSIGNEE(S): du Pont de Nemours, E. I., and Co.

SOURCE: Ger. Offen., 141 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO. -----	KIND ----	DATE -----	APPLICATION NO. -----	DATE
DE 1921277	A	19700409	DE 1969-1921277	196904 25
US 3660008	A	19720502	<-- US 1968-724239	196804 25
US 3765835	A	19731016	<-- US 1968-724238	196804 25
GB 1248652	A	19711006	<-- GB 1969-1248652	196904 10
BE 731944	A	19691001	<-- BE 1969-731944	196904 23
FR 2006953	A5	19700102	<-- FR 1969-13325	196904 25
JP 52003030	B4	19770125	<-- JP 1969-31550	196904 25

PRIORITY APPLN. INFO.:

<-- US 1968-724238	A	196804 25
<-- US 1968-724239	A	196804 25

GI For diagram(s), see printed CA Issue.

AB Fibers of acid-modified acrylic, polyamide, wool, and polyester with optional cellulosic fibers are dyed or printed with the

title dispersions by the Thermosol or pad-stream method. Thus, an aq. suspension of I [R = 2,4-(MeO)2C6H3NH (Q)] (II) was treated with 4,3-Me(HO3S)C6H3NO2 to give 90% I [R = Q, X = 4,3-Me(-O3S)C6H3NO2 (Q1)] (III), m. 199.5-200°. An aq. paste of III dispersed with Polyfon O was applied to Orlon 42-wool fabric to give a level, speck-free **dyeing** similar in shade to **dyeings** with aq. II. Similarly, other I were prepd. [R, X, % yield, m.p., and λ_{\max} (m μ) given]: p-C6H4NMeCH2CH2CN (Q2), Q1, 89, 207-8°, 526.5; Q, m-O2NC6H4SO3 (Q3), 41, 144-6°, 416; Q2, 2,4-(O2N)2C6H3SO3 (Q4), 97, 185-8°, -; p-C6H4N(CH2CH2CN)2, Q1, 95, 182.5-4°, -; p-NHC6H4N:NPh, Q1, 66, 207-9°, -. Also similarly prepd. were R+X- [R+, X, % yield, m.p. and λ_{\max} (m μ) given]; 2,6-Cl2C6H3C+(C6H2Me2NH2-3,5,4)2 (Q5), Q1, 81.1, 142-5°, -; Q5, 2-ClO7H7SO3, 81, 263-5°, -; Ph(p-Me2C6H4)2C+, 3,5-(MeO2C)2C6H3SO3, -, 195-8°, -; p-Z:CHN:N+MeC6H4Me (Z = 1,3,3-trimethyl-2-indolinylidene), Q1, 100, 224-7°, 438; 2,4-Cl(O2N)C6H3N:NC6H4NEtCH2CH2N+Me3-p (Q6), Q3, 93.4, 193-5°, 490; Q6, 2-ClO7H7SO3, -, 275-6°, -; Q6, Q4, -, 188-94°, -; Q6, Q1, -, 166-7°, -; Q6, 3,5-(MeO2C)2C6H3SO3, -, 248-9°, -; Q6, 2,4,6-Cl3C6H2SO3, -, 236-7°, -; Q6, anthraquinone-2-sulfonate, -, 247-8.5°, -; 3,4-Cl(HOCH2CH2N+Me2CH2CH2NH)C6H3N:NC6H3(NO2-2,4, Q1, 90, 175-7°, -; 3,4-Cl(RN+CH2CH2NH)C6H3N:NC6H3(NO2)Cl-4,2 [(R3N =) N - methylmorpholine], Q1, 80, 214-16°, -; 3,4-Cl(NCCH2CH2NH)C6H3N:NC6H4COCH2N+Me3-p, Q3, 83, 187-9°, -; 2,4-BzNH(Me2N)C6H3N:NC6H4COCH2N+Me3-p, Q1, 73.5, 223-5°, -; IV (R = R' = Et, Y = CC6H4CO2Me-2), Q1, 66, 131-3°, -; IV (R = Me, R' = CH2CH2CN, Y = N), Q4, 61, 170-80° (decompn.), -; 2-[7-(diethylamino)-2-oxo-2H-1-benzopyran-3-yl]-1,3-dimethylbenzimidazolium, Q4, 70, 227-9°, 435; V, Q1, 94 -, -; [3,[[2-(3-hydroxy-2-quinolyl)-1,3-dioxoindan-5-yl]carbonylamino]propyl]trimethylammonium, Q1, -, 162-7°, -; [[3-methyl-4-[4-(phenylazo)phenylazo]-5-pyrazolon-1-yl]methyl]trimethylammonium, Q3, 82, 197-8°, -.

IT 28766-07-6P

RL: IMF (Industrial manufacture); PREP (Preparation)
(prepn. of)

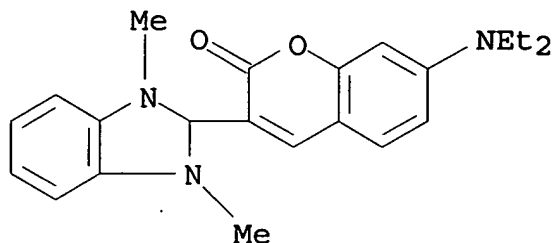
RN 28766-07-6 HCAPLUS

CN Benzimidazolium, 2-[7-(diethylamino)-2-oxo-2H-1-benzopyran-3-yl]-1,3-dimethyl-, 2,4-dinitrobenzenesulfonate (8CI) (CA INDEX NAME)

CM 1

CRN 50566-16-0

CMF C22 H24 N3 O2

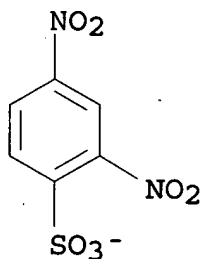


ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

CM 2

CRN 46686-40-2

CMF C6 H3 N2 O7 S



IC D06P
 CC 40 (Dyes, Fluorescent Whitening Agents, and Photosensitizers)
 ST cationic **dye** salt dispersions; dispersions cationic
dyes; arenesulfonate **dyes** dispersions; acrylic
 fiber **dyes**; polyamide fiber **dyes**
 IT **Dyeing**
 (Thermosol, of synthetic fibers, dispersions for)
 IT **Dyes**
 (dispersions of salts of cationic, with benzenesulfonic acid
 derivs.)
 IT 259-07-4DP, 2H-Naphth[2,3-f]isoindole, derivs. 25806-74-0P
 28765-97-1P 28765-98-2P 28766-00-9P 28766-01-0P 28766-02-1P
 28766-04-3P 28766-05-4P **28766-07-6P** 28766-08-7P
 28766-09-8P 28766-10-1P 28766-11-2P 28766-12-3P 28766-13-4P
 28766-14-5P 28766-15-6P 28766-16-7P 28766-17-8P 28766-18-9P

28766-19-0P 28766-20-3P 28766-21-4P 28895-00-3P 30798-10-8P
30798-11-9P 31984-93-7P

RL: IMF (Industrial manufacture); PREP (Preparation)
(prepn. of)

L40 ANSWER 53 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1970:91488 HCAPLUS
DOCUMENT NUMBER: 72:91488
TITLE: Fluorescent cationic **dyes**
PATENT ASSIGNEE(S): Geigy, J. R., A.-G.
SOURCE: Fr., 7 pp.
CODEN: FRXXAK
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	
FR 1539795		19680920	FR 1967-115124	196707 21
			<--	
CH 473197			CH	
DE 1569777			DE	
GB 1166161			GB	
US 3539583		19701110	US	196702 14
			<--	
PRIORITY APPLN. INFO.:			CH	196607 22
			<--	

GI For diagram(s), see printed CA Issue.
AB H2O-sol. compds. of the general formula I, where R and R1 are Me or Et, are fluorescent yellow to red **dyes** for polyacrylonitrile fibers (II). Thus, a suspension of 5 g 3-(2-benzimidazolyl)-7-(diethylamino)-2-coumarin imine (III) in 20 g Me2SO4 was heated for 10 min at 120°, poured into 500 ml H2O at 60°, brought to pH 4-5 with NaOAc, and treated with ZnCl2 and NaCl to give I (R = Et, R1 = Me, X = NMe, Y = H), which **dyes** II a fluorescent yellow shade very fast to washing. Similarly, other I were prepd. (R, R1, X, Y, and shade given): Et,

Me, NMe, Cl, greenish yellow; Me, Et, S, Cl, red-orange. Also prepd. was IV, yellow on II. III was prepd. by condensing 2-cyanomethylbenzimidazole and 4,2-Et₂N(HO)C₆H₃CHO in HCONMe₂ in the presence of pyrrolidine or piperidine as catalyst according to Ger. 1,098,125.

IT 27778-30-9P 27778-31-0P 29601-55-6P

RL: IMF (Industrial manufacture); PREP (Preparation)
(prepn. of)

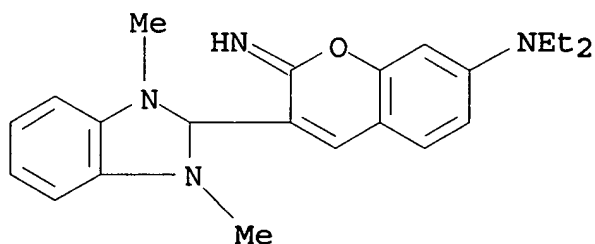
RN 27778-30-9 HCAPLUS

CN 1H-Benzimidazolium, 2-[7-(diethylamino)-2-imino-2H-1-benzopyran-3-yl]-1,3-dimethyl-, trichlorozincate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 50565-96-3

CMF C22 H25 N4 O



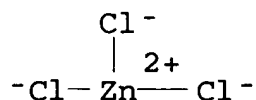
ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

CM 2

CRN 23603-98-7

CMF Cl3 Zn

CCI CCS



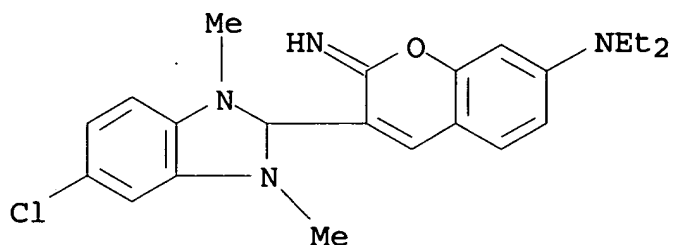
RN 27778-31-0 HCAPLUS

CN Benzimidazolium, 5-chloro-2-[7-(diethylamino)-2-imino-2H-1-benzopyran-3-yl]-1,3-dimethyl-, trichlorozincate(1-) (8CI) (CA INDEX NAME)

CM 1

CRN 47571-56-2

CMF C22 H24 Cl N4 O



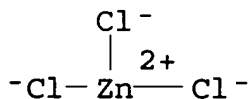
ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

CM 2

CRN 23603-98-7

CMF Cl3 Zn

CCI CCS



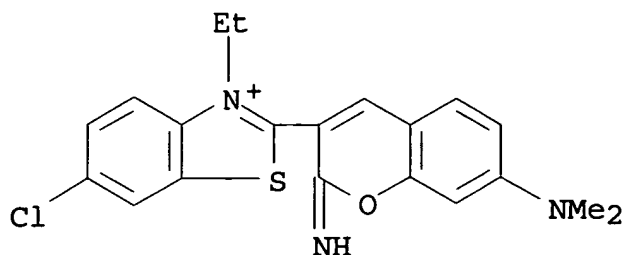
RN 29601-55-6 HCAPLUS

CN Benzothiazolium, 6-chloro-2-[7-(dimethylamino)-2-imino-2H-1-benzopyran-3-yl]-3-ethyl-, trichlorozincate(1-) (8CI) (CA INDEX NAME)

CM 1

CRN 47489-69-0

CMF C20 H19 Cl N3 O S

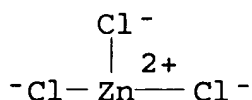


CM 2

CRN 23603-98-7

CMF Cl3 Zn

CCI CCS



IC C09B; D06P
 CC 40 (Dyes, Fluorescent Whitening Agents, and Photosensitizers)
 ST polyacrylonitrile fluorescent cationic **dyes**; fluorescent cationic **dyes** polyacrylonitrile; cationic **dyes** fluorescent polyacrylonitrile; coumarin imine cationic **dyes**; imine coumarin cationic **dyes**
 IT Fiber, acrylic, uses and miscellaneous
 RL: USES (Uses)
 (dyes for, iminobenzopyran derivs. as)
 IT **Dyes**
 (iminobenzopyran derivs., acrylic fibers)
 IT 27778-30-9P 27778-31-0P 27913-30-0P
 29601-55-6P
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (prepn. of)

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